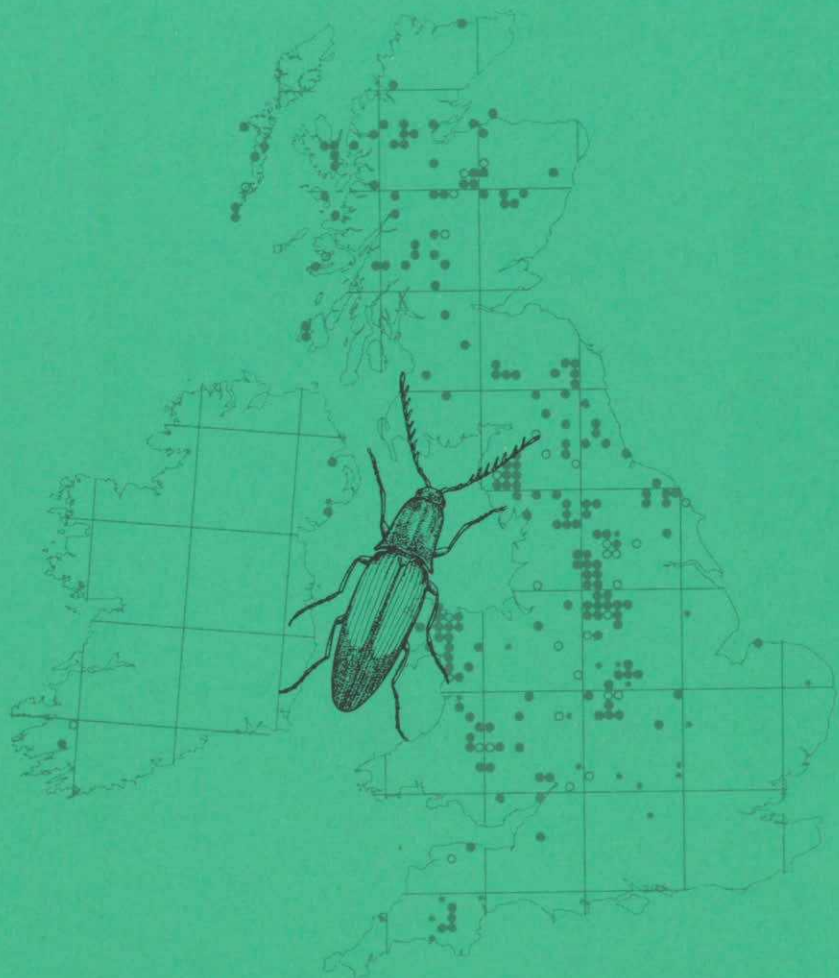


**PROVISIONAL ATLAS OF THE
CLICK BEETLES
(COLEOPTERA : ELATEROIDEA)
OF THE BRITISH ISLES**

HOWARD MENDEL



BIOLOGICAL RECORDS CENTRE

Natural Environment Research Council

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The Institute of Terrestrial Ecology (ITE) was established in 1973, from the former Nature Conservancy's research stations and staff, joined later by the Institute of Tree Biology and the Culture Centre of Algae and Protozoa. ITE contributes to, and draws upon, the collective knowledge of the 14 sister institutes which make up the Natural Environment Research Council, spanning all the environmental sciences.

The Institute studies the factors determining the structure, composition and processes of land and freshwater systems, and of individual plant and animal species. It is developing a sounder scientific basis for predicting and modelling environmental trends arising from natural or man-made change. The results of this research are available to those responsible for the protection, management and wise use of our natural resources.

One quarter of ITE's work is research commissioned by customers, such as the Department of Environment, the European Economic Community, the Nature Conservancy Council and the Overseas Development Administration. The remainder is fundamental research supported by NERC.

ITE's expertise is widely used by international organizations in overseas projects and programmes of research.

The Biological Records Centre is operated by ITE, and receives financial support from the Nature Conservancy Council. It seeks to help naturalists and research biologists to co-ordinate their efforts in studying the occurrence of plants and animals in the British Isles, and to make the results of these studies available to others.

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The Museum
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IPSWICH
Suffolk
IP1 3QH

04873 (Abbots Ripton) 381

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OF THE
CLICK BEETLES (COLEOPTERA : ELATEROIDEA)
OF THE BRITISH ISLES

By
HOWARD MENDEL
(IPSWICH MUSEUMS)

INSTITUTE OF TERRESTRIAL ECOLOGY
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FOREWORD

The Elateroidea is not a particularly easy group of beetles to study; there are no reliable keys published in English to all the species of the British Isles, and many species are difficult to find or are apparently rare or localized. Despite these problems, some 40 coleopterists have taken up the challenge and have supplied Howard Mendel with a large body of information since the scheme was launched in 1983.

It is mainly due to the enthusiasm and energy of Howard Mendel, as the scheme organizer, that a provisional atlas is possible after only 5 years of gathering records. Not only that, he has prepared the maps himself, by hand, using materials supplied by the Biological Records Centre. Clearly the records mapped have been checked by Mr Mendel in his usual meticulous way; as co-author of the excellent Butterflies of Suffolk, he is well aware that records submitted to recording schemes may include a few errors. However, the data are not yet held in the national data bank at the Biological Records Centre and have not been subjected to the Centre's usual checking and validation. We look forward to processing the data in preparation for the atlas planned by Mr Mendel for the early 1990's.

Monks Wood Experimental Station
November 1987

Paul T Harding
Biological Records Centre

INTRODUCTION

The national scheme to record the distribution of click beetles and their near allies, in the British Isles, was launched in 1983. This provisional atlas, a summary of progress to date, has been produced to show contributors which areas are under-worked and which species under-recorded.

The nomenclature and taxonomic arrangement follow Pope (1977), with three additions. Panspoeus guttatus Sharp was added to the British list by Owen et al. (1985) and has been placed at the end of the Elateridae because of its uncertain phyletic position. Zorochochros flavipes (Aubé), added to the British list by Cooter (1983), and Selatosomus melancholicus (Fabricius), recently added to the Irish list (Speight 1986), have been inserted at the appropriate alphabetical position within their respective genera.

The following species have not been mapped:

Lacon querceus (Herbst)

Known to Stephens (1830) from Windsor Forest where it was rediscovered by Allen (1936). Windsor remains the sole British locality.

Ampedus nigerimus (Lacordaire)

Not uncommon at Windsor where it was discovered in 1841 by Desvignes (1842). The larva from Mytchett, Hampshire, (Emden 1945) proved to be A. balteatus (A A Allen personal communication), and records from Tooting Common (Allen 1966), Epping Forest (Hammond 1979) and other British localities have yet to be confirmed.

Ampedus praeustus (Fabricius)

The specimens collected at Glencar, Co Kerry, Ireland, (Donisthorpe 1917) are the only ones ever taken in the British Isles. The surviving specimen (British Museum, Natural History) is unlike typical A. praeustus, but cannot easily be assigned to another species of Ampedus.

Ampedus ruficeps (Mulsant & Guillebeau)

A single specimen found by Allen (1938) in Windsor Great Park remained the only British example until the species was rediscovered in the same area in 1986.

Ampedus sanguineus (Linnaeus)

The only extant British specimens were taken in the 19th century and are from Salisbury (British Museum, Natural History), and the New Forest (Manchester Museum). It is most likely that a further specimen, in the Dale Collection (Hope Entomological Collections, University of Oxford), was collected in the New Forest, in 1830 (A A Allen personal communication).

Zorochochros flavipes (Aubé)

The few records for this species are included with Z. minimus. A number of taxa within the genus Zorochochros are poorly defined, and I am not at present convinced that we have more than a single species in Britain.

Cardiophorus gramineus (Scopoli)

The 'metropolitan district', Norfolk, Somerset, Baron Wood in Cumberland, Windsor, the New Forest and Collingbourne Wood are given by Stephens (1830) as localities for this species. There are no later records.

Cardiophorus ruficollis (Linnaeus)

Recorded by Stephens (1830) from the 'neighbourhood' of London and from Norfolk, but not since that time.

Selatosomus cruciatus (Linnaeus)

Recorded from 'near Windsor' (Stephens 1830) and 'Windsor Forest' (Donisthorpe 1939) in the early part of the 19th century. There are no more recent records.

THE DISTRIBUTION MAPS

The maps in this atlas are in every way provisional and show progress to date. The literature search is incomplete, many important local lists have yet to be abstracted and others must be completely unknown to me. Museums and private collections hold a wealth of unpublished data, only a fraction of which have, so far, been extracted for inclusion on the distribution maps.

Nevertheless, interesting distributions are already beginning to emerge, but far more data must be collected before any reliance can be placed upon them. Many of the Elateroidea are genuinely rare and have precise habitat requirements. They are, therefore, potentially very useful to conservationists as indicators of habitat quality. Only as the biology and distribution of the British species become better known can the importance of Elateroidea to conservation be realized. Within five years I plan to publish 'final' distributions and detailed biologies of all the British species.

Records plotted on the distribution maps have been divided into three date classes:

- * 19th century
- 1900-1949
- 1950 onwards

Only the most recent record for each 10-km square is represented.

Beneath each map is a table showing distribution by vice-county. Two date classes are used in these tables - pre-1950 and 1950 onwards - but it is possible to tell if there is a record in each class, as follows:

- 000 Pre-1950
- 000 1950-1987
- 000 Both date classes

Vague records for a vice-county, impossible to assign to a 10-km square, have been included in some of the tables. Distributions should be interpreted with care after comparison with the coverage map.

ACKNOWLEDGEMENTS

I am most grateful to all those people who have, over the years, sent me batches of cards and boxes of specimens. Any atlas of this kind is essentially a corporate effort, and I should particularly like to thank the following principal recorders.

Dr K N A Alexander
Mr A A Allen
Mr D M Appleton
Mr D B Atty
Dr R G Booth
Mr J H Bratton
Mr J M Campbell
Mr R Carr
Mr M J Collier
Mr J Cooter
Mr R Crossley
Mr M L Denton
Mr A B Drane
Mr M D Eyre
Mr J H Flint
Mr A P Foster
Mr A R Godfrey
Mr P M Hammond
Mr P J Hodge
Dr P S Hyman
Mr T J James

Mr J B Jobe
Mr C Johnson
Dr R S Key
Dr P Kirby
Mr S A Lane
Mr A S Lazenby
Mr D A Lott
Dr M L Luff
Mr C Mackechnie-Jarvis
Mr R J Marsh
Dr I McClenaghan
Mrs M J Morgan
Mr D R Nash
Professor J A Owen
Mr E G Philp
Mr D A Prance
Mr N D Redgate
Dr D A Sheppard
Mr M Sinclair
Mr D A Stone
Dr K R Watt

For the loan of specimens and for access to the collections in their care, I thank Mr R J Barnett (Herbert Art Gallery and Museum, Coventry), Miss C M F von Hayek (British Museum, Natural History), Dr A G Irwin (Castle Museum, Norwich), Mr C Johnson (Manchester Museum), Mr C W Plant (Passmore Edwards Museum) and Mr F R Woodward (Art Gallery and Museum, Glasgow). The Nature Conservancy Council has been most helpful in allowing me access to data files.

I am most grateful to Mr P T Harding of the Biological Records Centre for his help since the beginning of this project, and for organizing the production of this atlas.

I thank Mr M N Sanford and Mrs A Taylor of the Suffolk Biological Records Centre for considerable help with the production of the maps and vice-county distribution tables.

Grants from the Royal Irish Academy (Praeger Fund) and the British Ecological Society for recording and to study the biology of the rarer species have proved invaluable.

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DISTRIBUTION MAPS

THE VICE-COUNTY NUMBERS AND CORRESPONDING VICE-COUNTIES

ENGLAND AND WALES

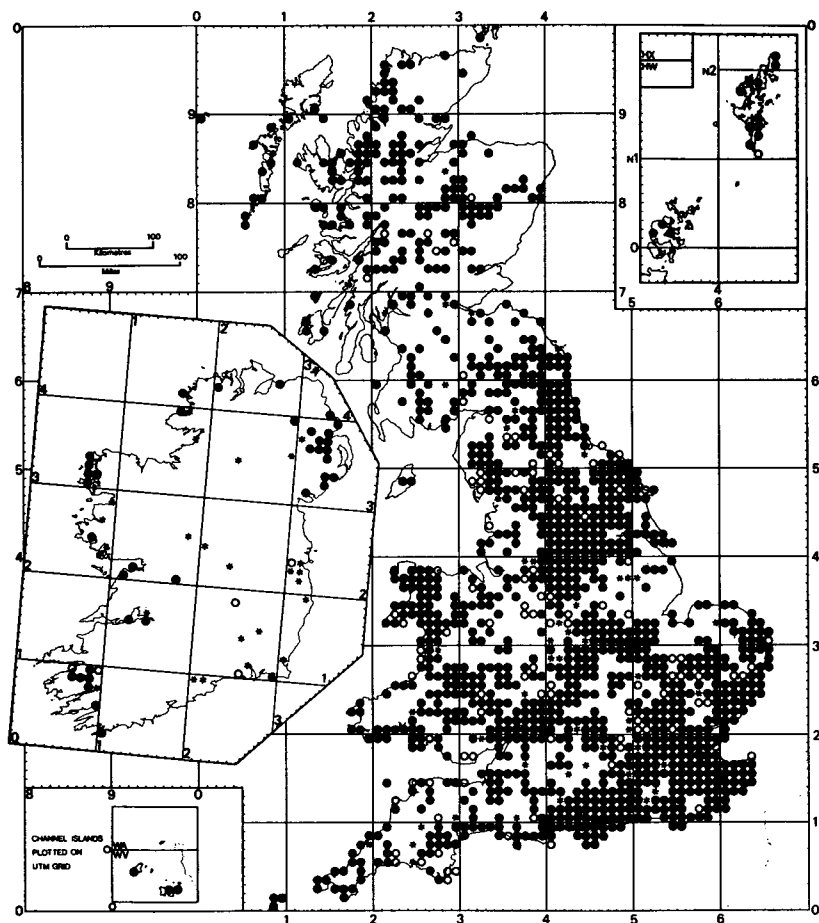
- | | | |
|--------------------------------|--------------------------|--|
| 1. West Cornwall (with Scilly) | 26. West Suffolk | 51. Flintshire |
| 2. East Cornwall | 27. East Norfolk | 52. Anglesey |
| 3. South Devon | 28. West Norfolk | 53. South Lincolnshire |
| 4. North Devon | 29. Cambridgeshire | 54. North Lincolnshire |
| 5. South Somerset | 30. Bedfordshire | 55. Leicestershire (with Rutland) |
| 6. North Somerset | 31. Huntingdonshire | 56. Nottinghamshire |
| 7. North Wiltshire | 32. Northamptonshire | 57. Derbyshire |
| 8. South Wiltshire | 33. East Gloucestershire | 58. Cheshire |
| 9. Dorset | 34. West Gloucestershire | 59. South Lancashire |
| 10. Isle of Wight | 35. Monmouthshire | 60. West Lancashire |
| 11. South Hampshire | 36. Herefordshire | 61. South-east Yorkshire |
| 12. North Hampshire | 37. Worcestershire | 62. North-east Yorkshire |
| 13. West Sussex | 38. Warwickshire | 63. South-west Yorkshire |
| 14. East Sussex | 39. Staffordshire | 64. Mid-west Yorkshire |
| 15. East Kent | 40. Shropshire (Salop) | 65. North-west Yorkshire |
| 16. West Kent | 41. Glamorgan | 66. Durham |
| 17. Surrey | 42. Breconshire | 67. South Northumberland |
| 18. South Essex | 43. Radnorshire | 68. North Northumberland
(Cheviot) |
| 19. North Essex | 44. Carmarthenshire | 69. Westmorland with North
Lancashire |
| 20. Hertfordshire | 45. Pembrokeshire | 70. Cumberland |
| 21. Middlesex | 46. Cardiganshire | 71. Isle of Man |
| 22. Berkshire | 47. Montgomeryshire | 113. Channel Isles |
| 23. Oxfordshire | 48. Merionethshire | |
| 24. Buckinghamshire | 49. Caernarvonshire | |
| 25. East Suffolk | 50. Denbyshire | |

SCOTLAND

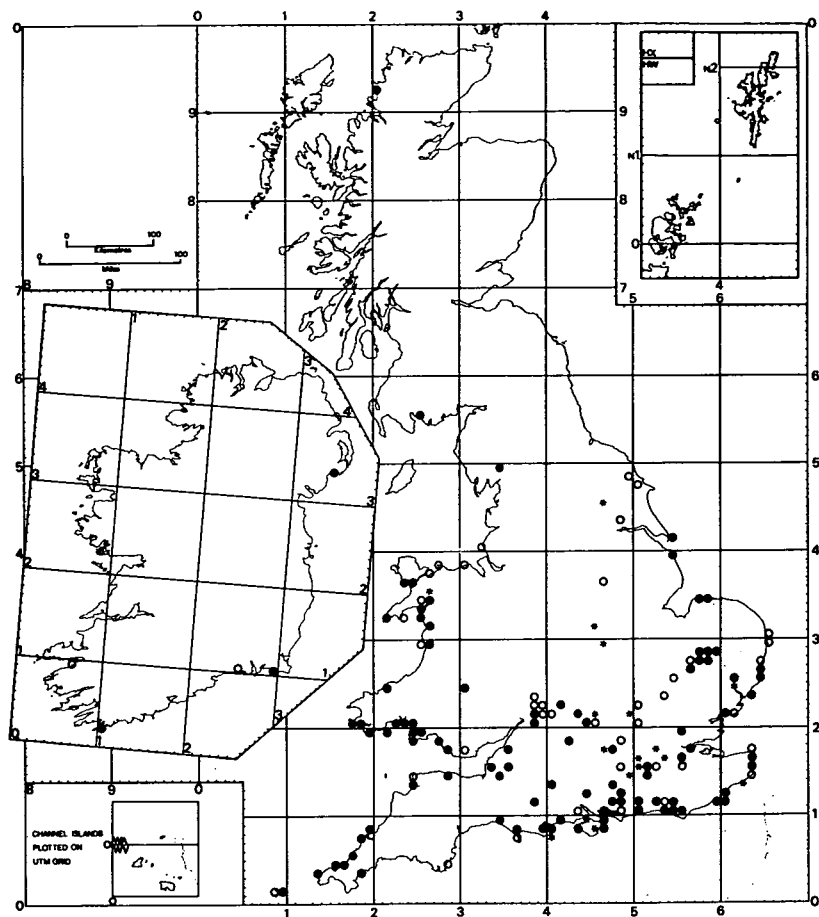
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|-------------------------------|---|---------------------------------|
| 72. Dumfriesshire | 86. Stirlingshire | 99. Dunbartonshire |
| 73. Kirkcudbrightshire | 87. West Perthshire (with
Clackmannan) | 100. Clyde Isles |
| 74. Wigtownshire | 88. Mid Perthshire | 101. Kintyre |
| 75. Ayrshire | 89. East Perthshire | 102. South Ebudes |
| 76. Renfrewshire | 90. Angus (Forfar) | 103. Mid Ebudes |
| 77. Lanarkshire | 91. Kincardineshire | 104. North Ebudes |
| 78. Peebleshire | 92. South Aberdeenshire | 105. West Ross |
| 79. Selkirkshire | 93. North Aberdeenshire | 106. East Ross |
| 80. Roxburghshire | 94. Banffshire | 107. East Sutherland |
| 81. Berwickshire | 95. Moray (Elgin) | 108. West Sutherland |
| 82. East Lothian (Haddington) | 96. East Inverness-shire (with Nairn) | 109. Caithness |
| 83. Midlothian (Edinburgh) | 97. West Inverness-shire | 110. Outer Hebrides |
| 84. West Lothian (Linlithgow) | 98. Argyll Main | 111. Orkney Islands |
| 85. Fifeshire (with Kinross) | | 112. Shetland Islands (Zetland) |

IRELAND

- | | | |
|-----------------------------|------------------------------|--------------------|
| H.1. South Kerry | H.15. South-east Galway | H.28. Sligo |
| H.2. North Kerry | H.16. West Galway | H.29. Leitrim |
| H.3. West Cork | H.17. North-east Galway | H.30. Cavan |
| H.4. Mid Cork | H.18. Offaly (King's County) | H.31. Louth |
| H.5. East Cork | H.19. Kildare | H.32. Monaghan |
| H.6. Waterford | H.20. Wicklow | H.33. Fermanagh |
| H.7. South Tipperary | H.21. Dublin | H.34. East Donegal |
| H.8. Limerick | H.22. Meath | H.35. West Donegal |
| H.9. Clare | H.23. West Meath | H.36. Tyrone |
| H.10. North Tipperary | H.24. Longford | H.37. Armagh |
| H.11. Kilkenny | H.25. Roscommon | H.38. Down |
| H.12. Wexford | H.26. East Mayo | H.39. Antrim |
| H.13. Carlow | H.27. West Mayo | H.40. Londonderry |
| H.14. Leix (Queen's County) | | |



Records received



VICE-COUNTY DISTRIBUTIONS

Agrypnus murinus (L.)

Britain

1	2	3	4	5	6		8	9	10	11	12	13	14	15	16
17	18	19	20		22	23	24	25	26		28	29	30		
33	34							41		43	44	45	46		48
49		51	52		54	55	56			59		61	62		
				69				73							
											108				

Channel Islands



Pre-1950

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1950-1987

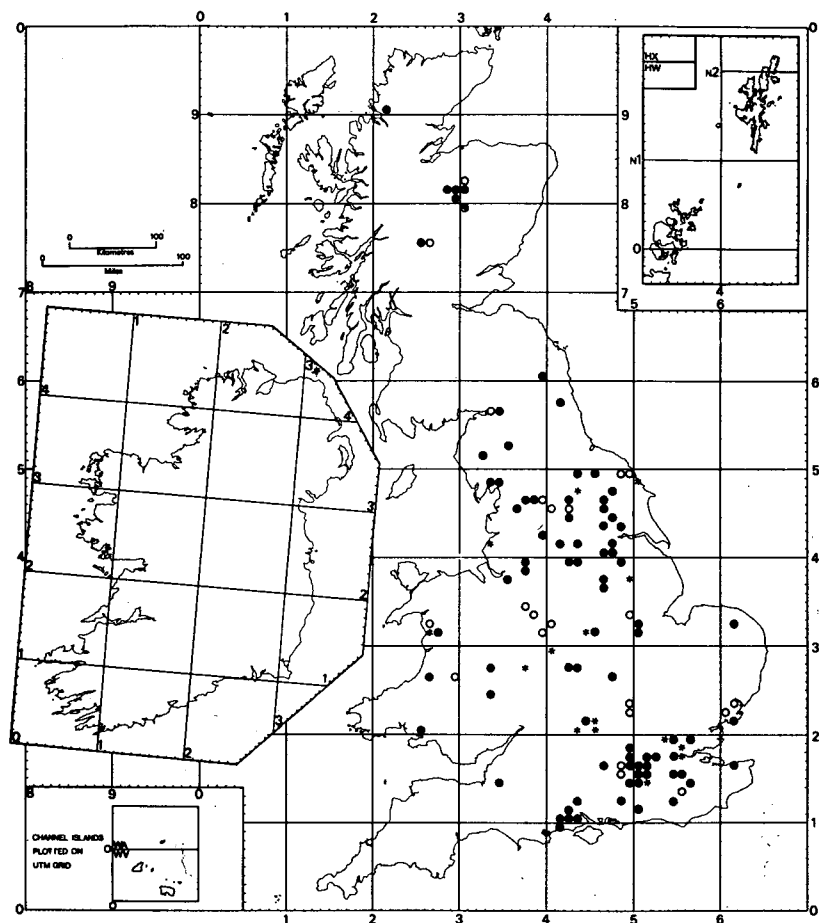
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Both date classes

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Ireland

H1		H3			H6			H9
	H12				H16			
H21	H22							
H31							H38	H39 H40



VICE-COUNTY DISTRIBUTIONS

Ampedus balteatus (L.)

Britain

					6					11	12	13	14	15	16
17	18	19			22	23	24	25		27			30		32
			36	37	38	39				43	44		46		48
				53	54	55	56		58	59	60	61	62	63	64
		67		69	70										
							88				92			95	96
								105							

Channel Islands



Pre-1950

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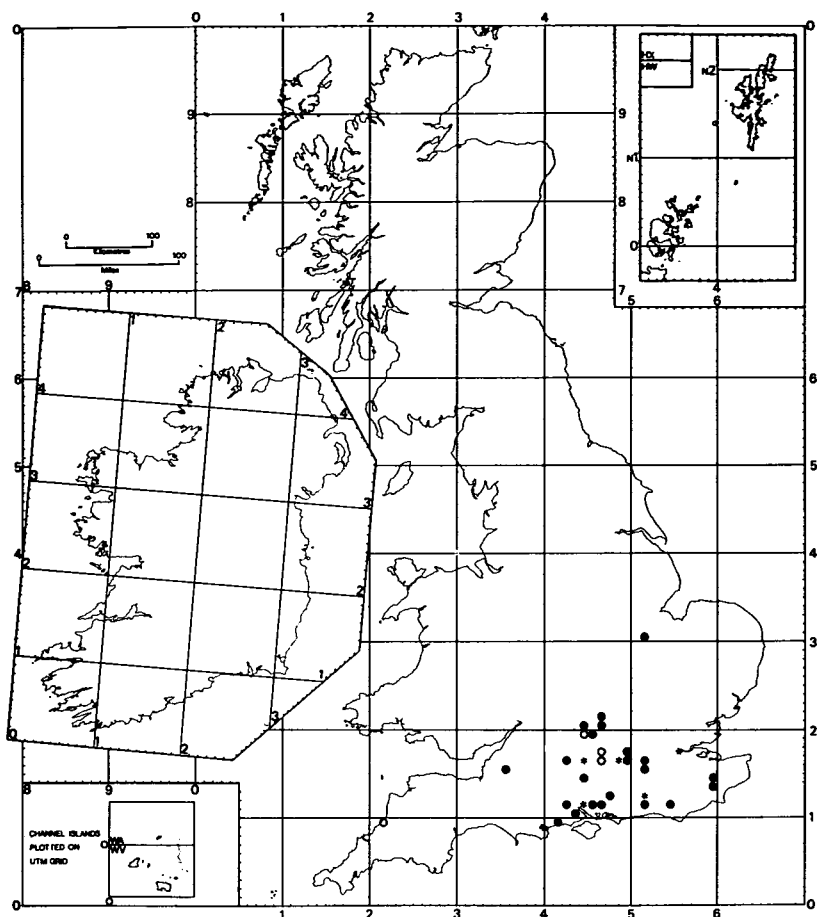
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Ireland

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Ampedus elongantulus (F.)

VICE-COUNTY DISTRIBUTIONS

Britain

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17					22	23	24								32

Channel Islands



Pre-1950

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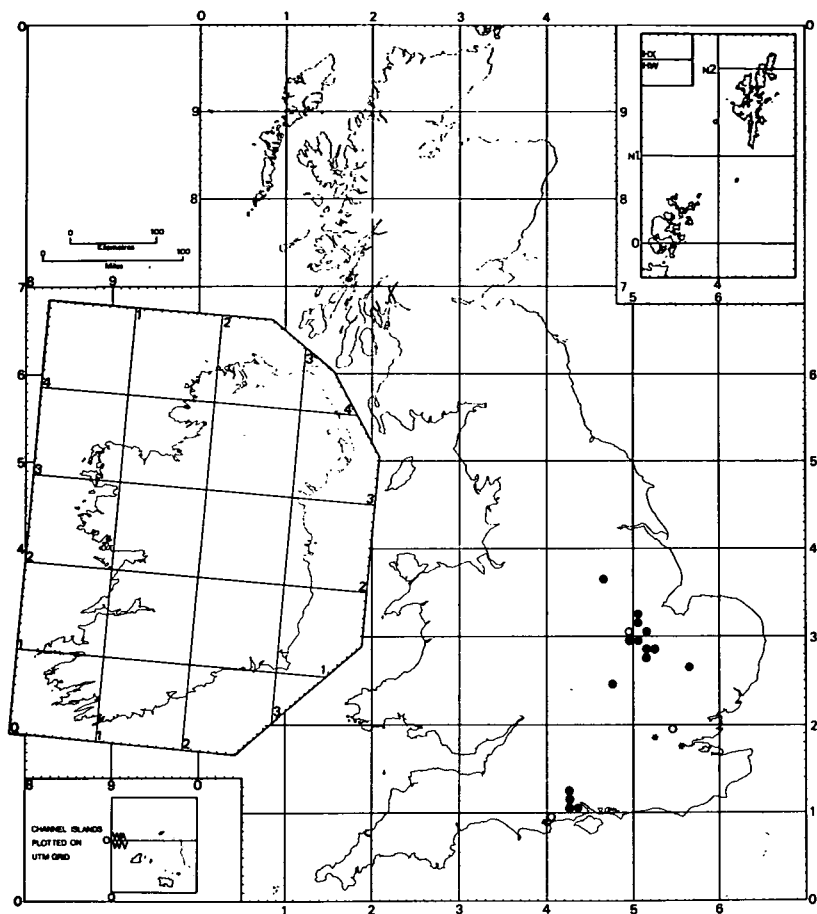
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Ireland



VICE-COUNTY DISTRIBUTIONS
Britain

Ampedus pomonae (Stephens)

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			53			56						

Channel Islands



Pre-1950

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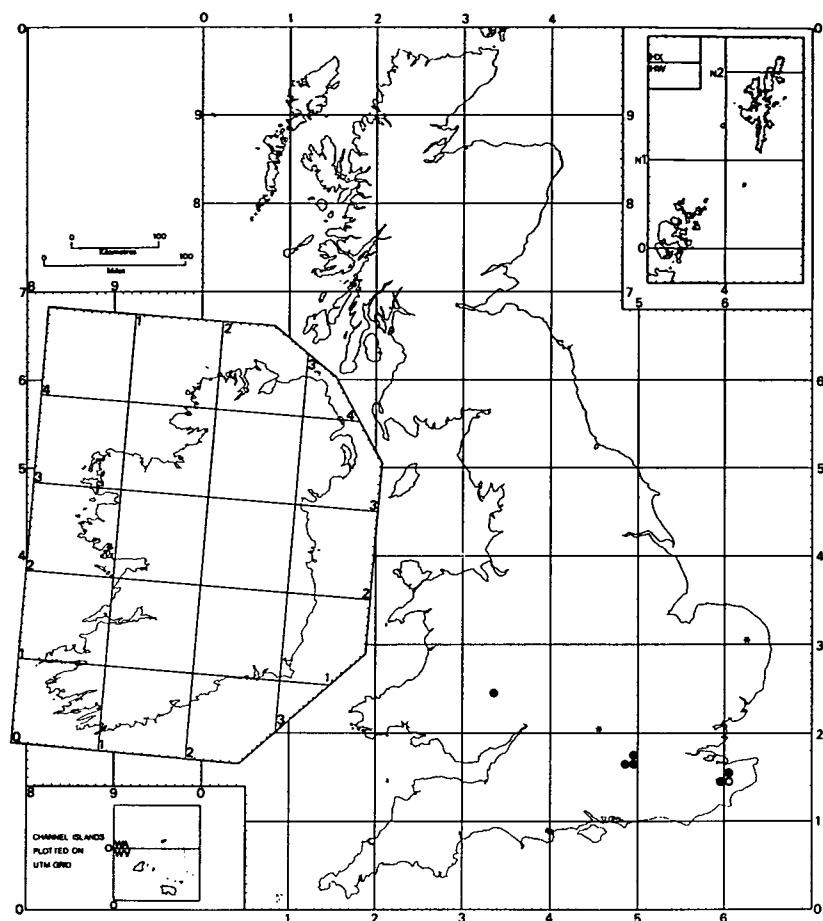
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Ireland



VICE-COUNTY DISTRIBUTIONS

Ampedus rufipennis (Stephens)

Britain

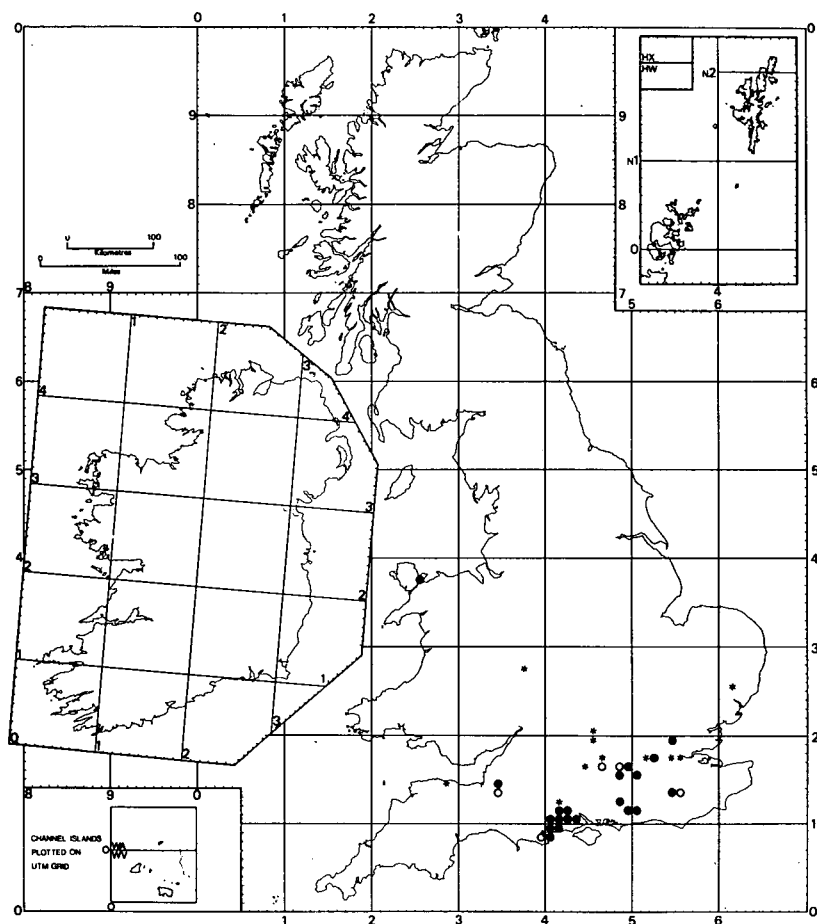
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17								27				
			36									

Channel Islands



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 1950-1987 000
 Both date classes 000

Ireland



VICE-COUNTY DISTRIBUTIONS

Ampedus sanguinolentus, (Schränk)

Britain

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				37											
49															

Channel Islands



Pre-1950

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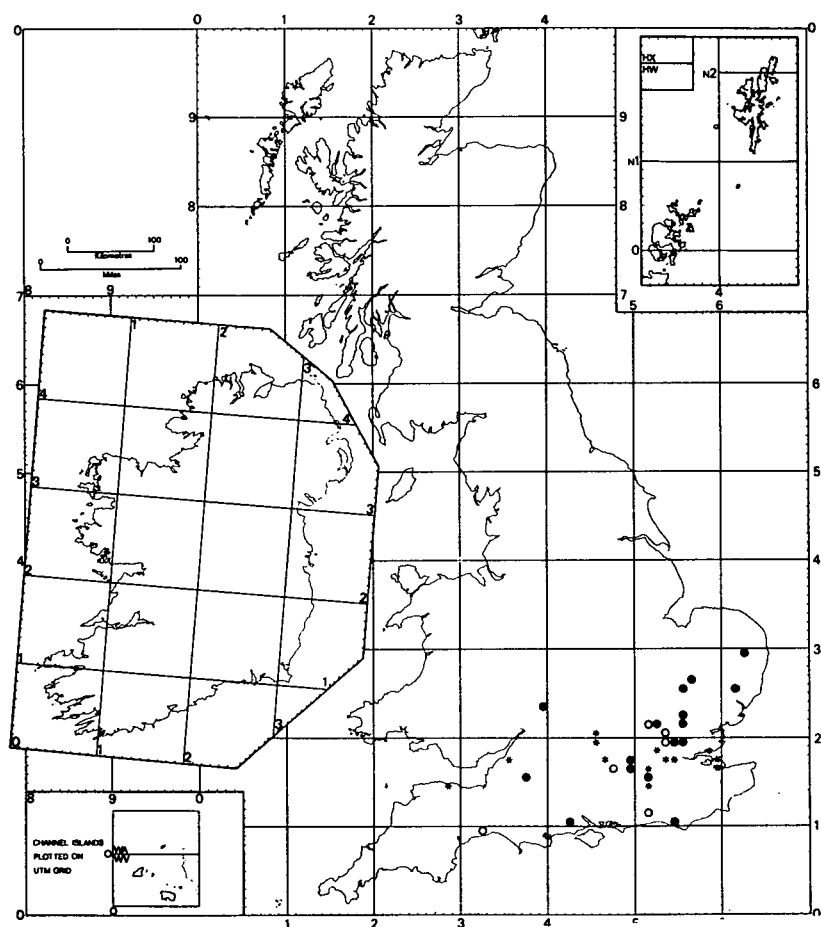
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Ireland



VICE-COUNTY DISTRIBUTIONS

Ischnodes sanguinicollis (Panzer)

Britain

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33														
								57						

Channel Islands



Pre-1950

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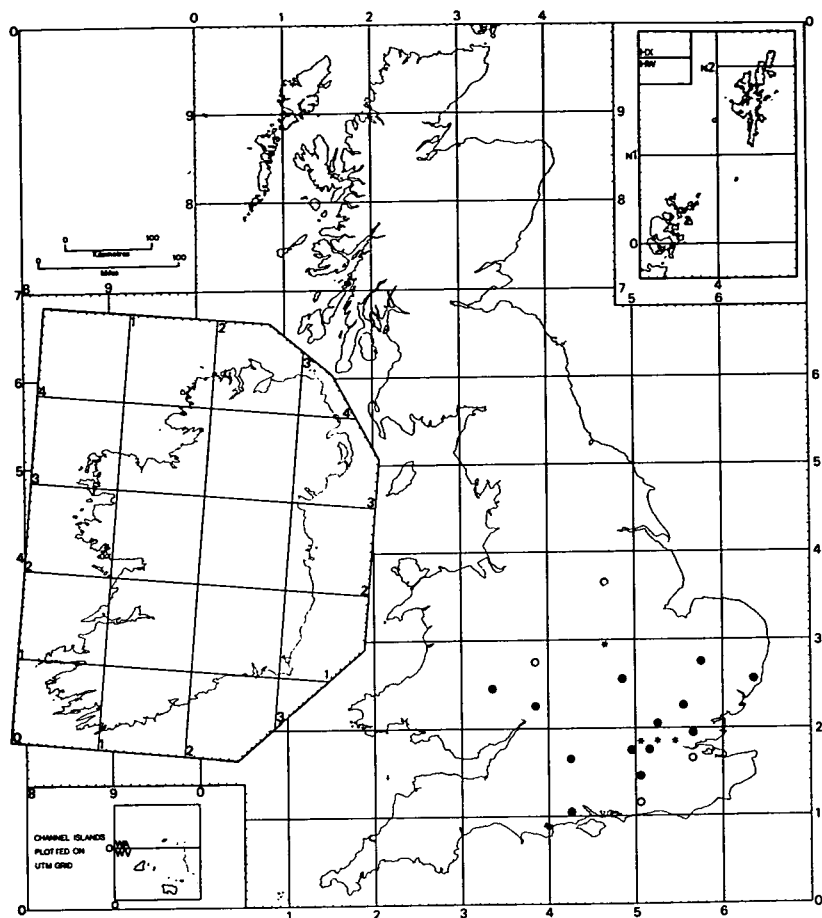
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Ireland



VICE-COUNTY DISTRIBUTIONS

Procaerus tibialis (Boisduval & Lacordaire)

Britain

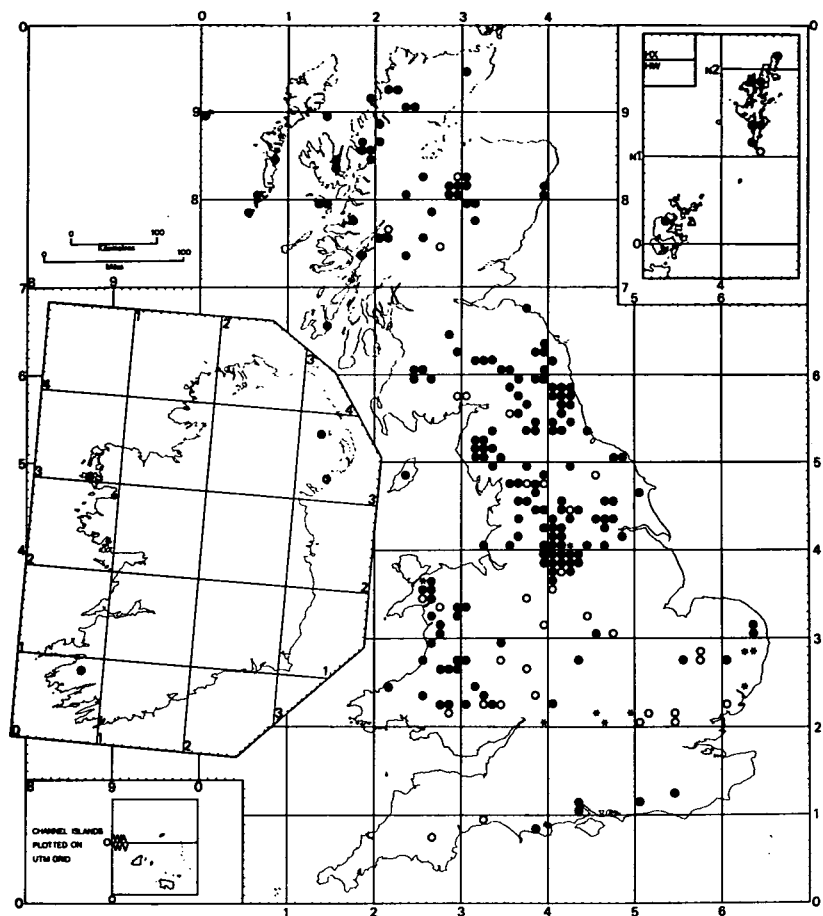
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	34		36	37											
						55	56								

Channel Islands



Pre-1950 000
 1950-1987 000
 Both date classes 000

Ireland



VICE-COUNTY DISTRIBUTIONS

Hypnoidus riparius (F.)

Britain

		3						9		11		13	14		
		19	20			23		25	26	27		29	30		
33	34	35		37	38	39	40		42	43	44		46	47	48
49					54	55		57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73		75		77		79	80
	82						88			91	92			95	96
97	98				102		104	105		107	108	109	110	111	112

Channel Islands



Pre-1950

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1950-1987

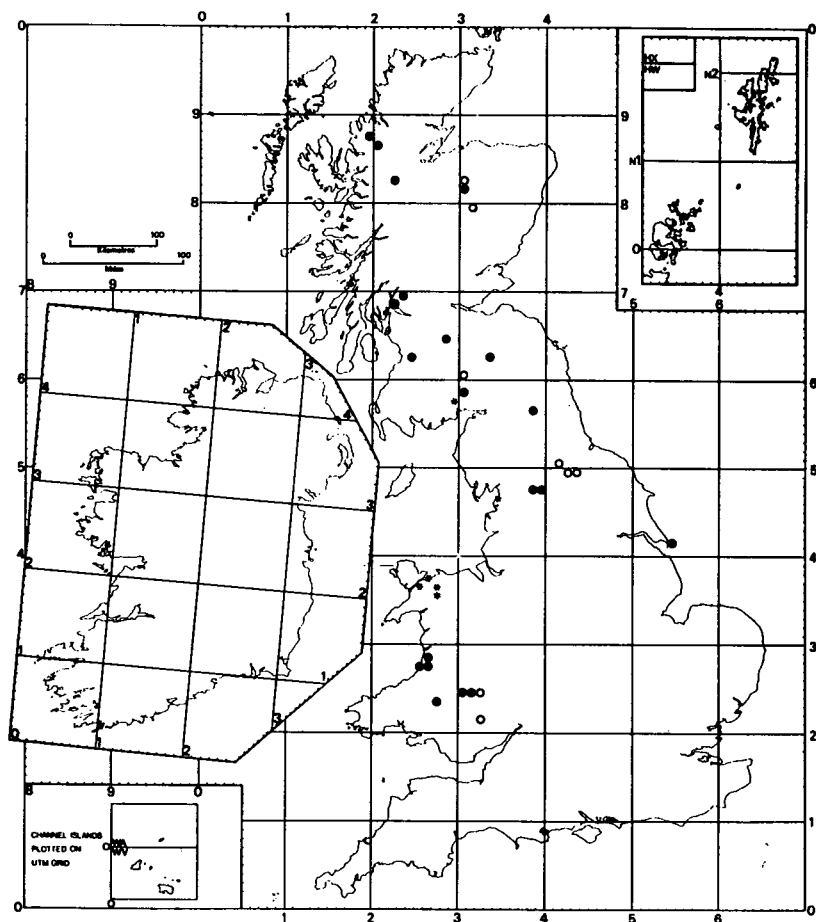
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Both date classes

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Ireland

H1															
H21											H27				
												H38	H39		



VICE-COUNTY DISTRIBUTIONS

Fleutiauxellus maritimus (Curtis)

Britain

		35						42	43	44		46			
49	50									60	61				64
65		67				72			75		77		79		
										92			95	96	
	98	99					105								

Channel Islands



Pre-1950

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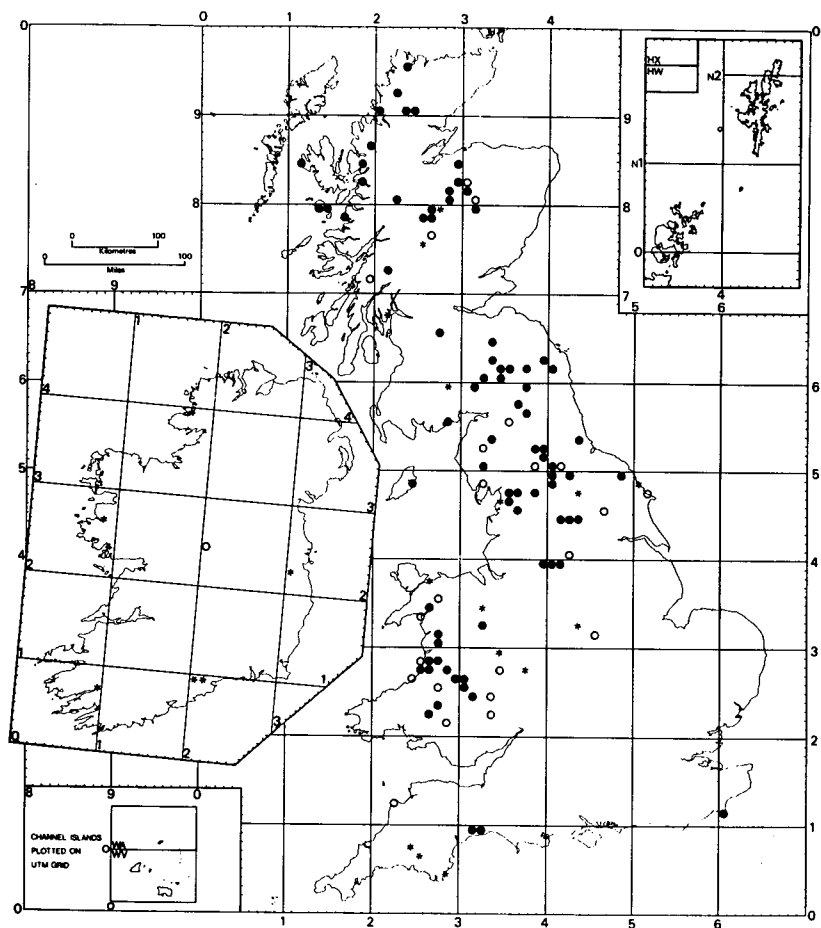
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Ireland



VICE-COUNTY DISTRIBUTIONS

Zoroachros minimus (Boisduval & Lacordaire)

Britain

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			36				40	41	42	43	44		46	47	48			
49	50				55		57	58		60	61	62	63	64				
65	66	67	68		70	71	72	73				77	78	79	80			
							88				92		94	95	96			
97	98	99					104	105	106	107	108							

Channel Islands



Pre-1950

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1950-1987

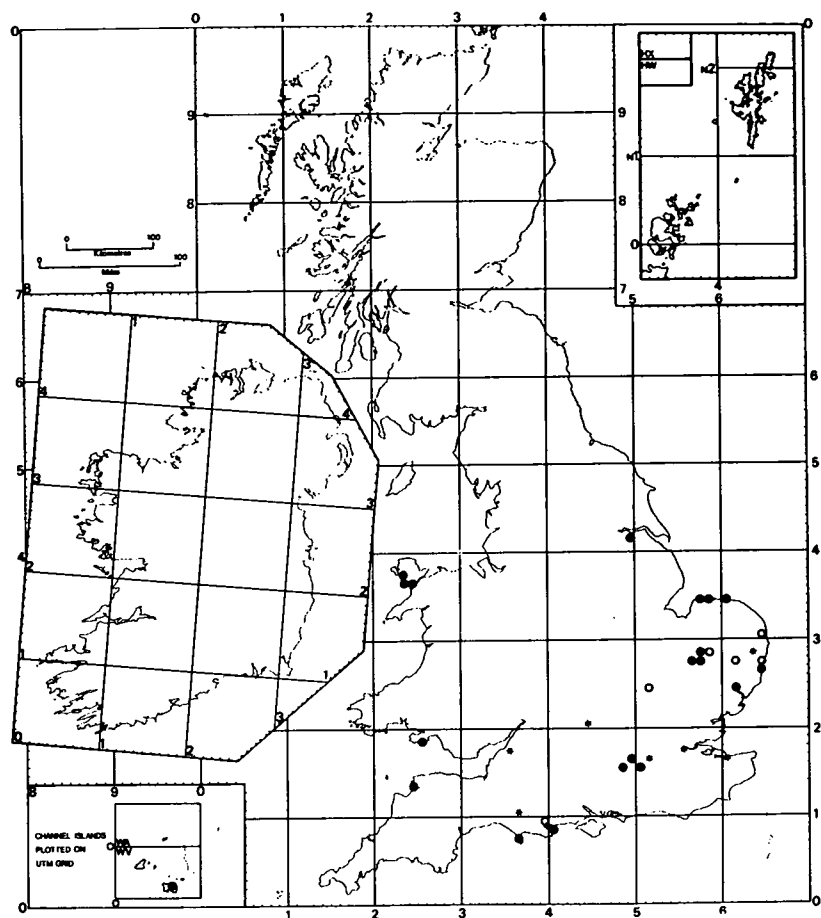
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Both date classes

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Ireland

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					H16			
H21		H23						
		H33	H34	H35			H38	



VICE-COUNTY DISTRIBUTIONS

Cardiophorus asellus Erichson

Britain

			4				9		12			15	16
17				22			25	26	27	28		30	
							41						
		52		54									

Channel Islands

113

Pre-1950

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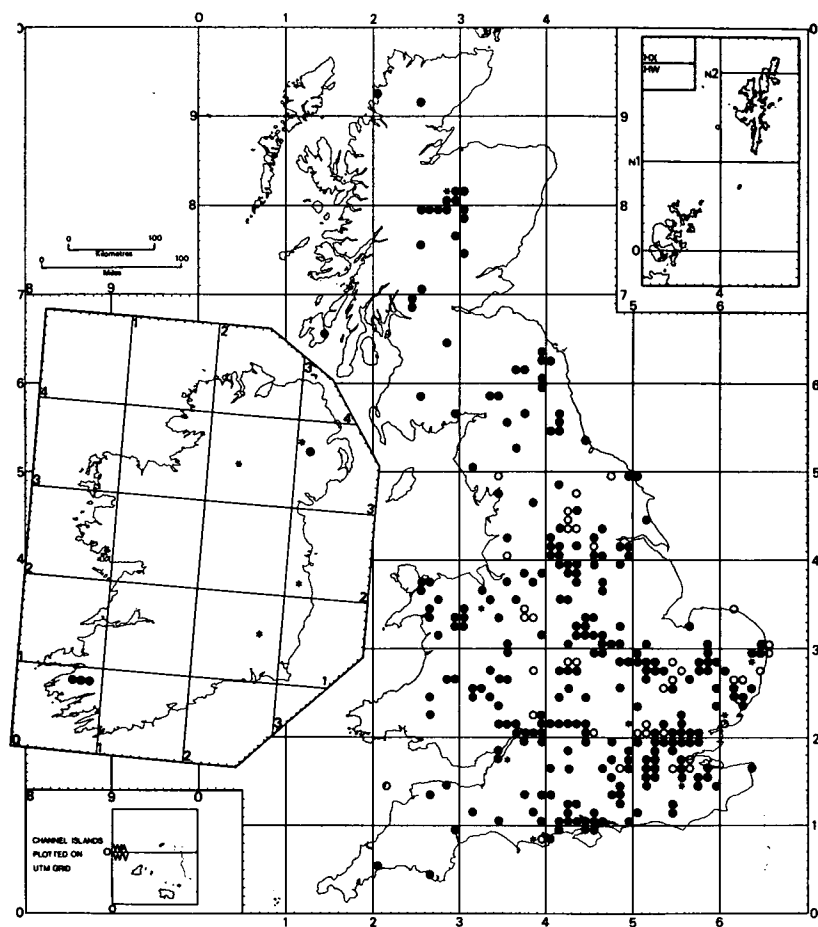
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Ireland



VICE-COUNTY DISTRIBUTIONS

Melanotus erythropus (Gmelin in L.)

Britain

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40			43	44			47	48
49	50	51	52		54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70		72	73				77			80
					86	87	88	89			92			95	96
97					102					107	108				

Channel Islands



Pre-1950

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1950-1987

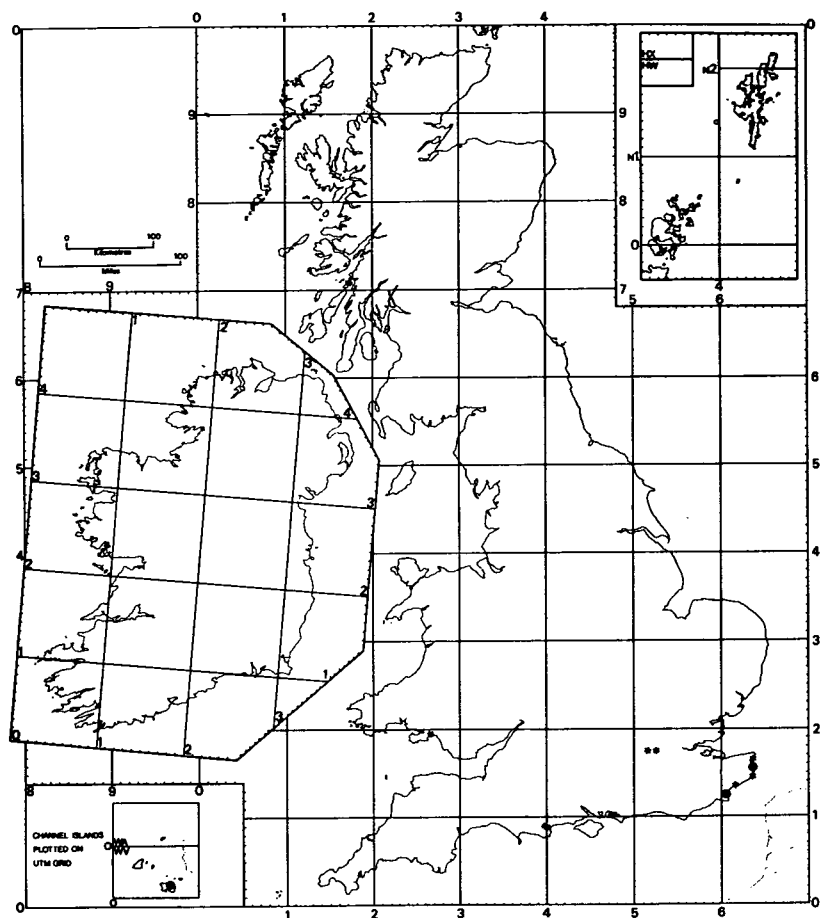
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Both date classes

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Ireland

H1									
		H13							H20
H21									
		H33						H38	H39



VICE-COUNTY DISTRIBUTIONS

Britain

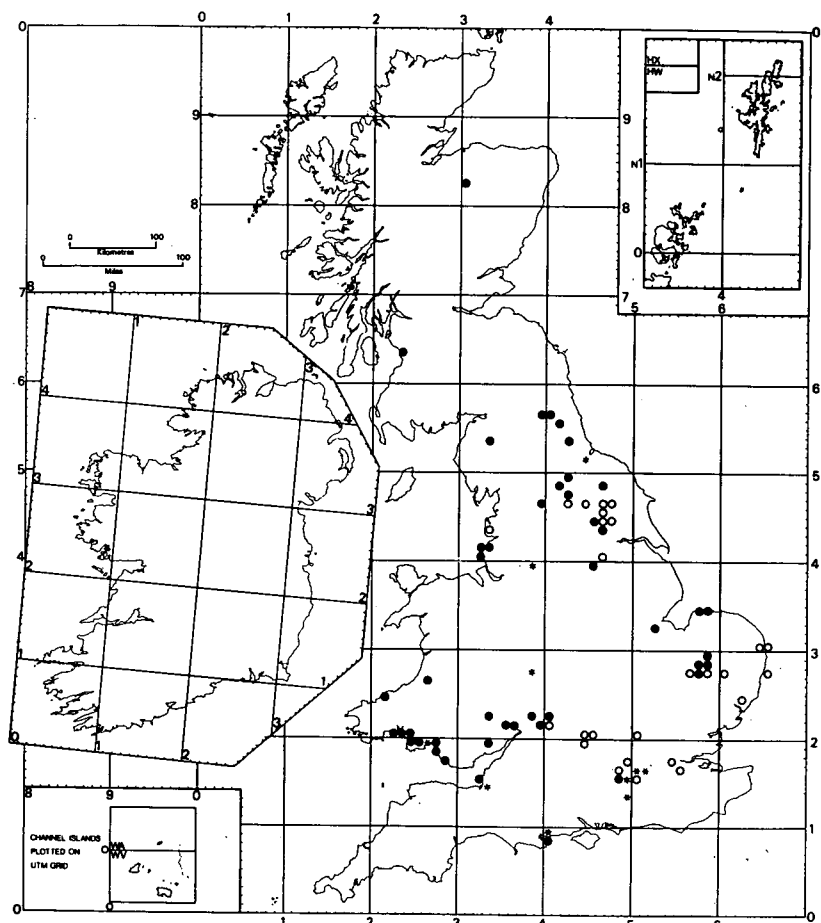
Channel Islands

Pre-1950

1950-1987

Both date classes

Ireland



VICE-COUNTY DISTRIBUTIONS

Cidnopus aeruginosus (Olivier)

Britain

				6		9		12				16
17		20		22	23	25	26	28				
33	34	35		37		41		44		46		
				53				59	60	61	62	63
65	66	67		70				75				64
											95	

Channel Islands



Pre-1950

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1950-1987

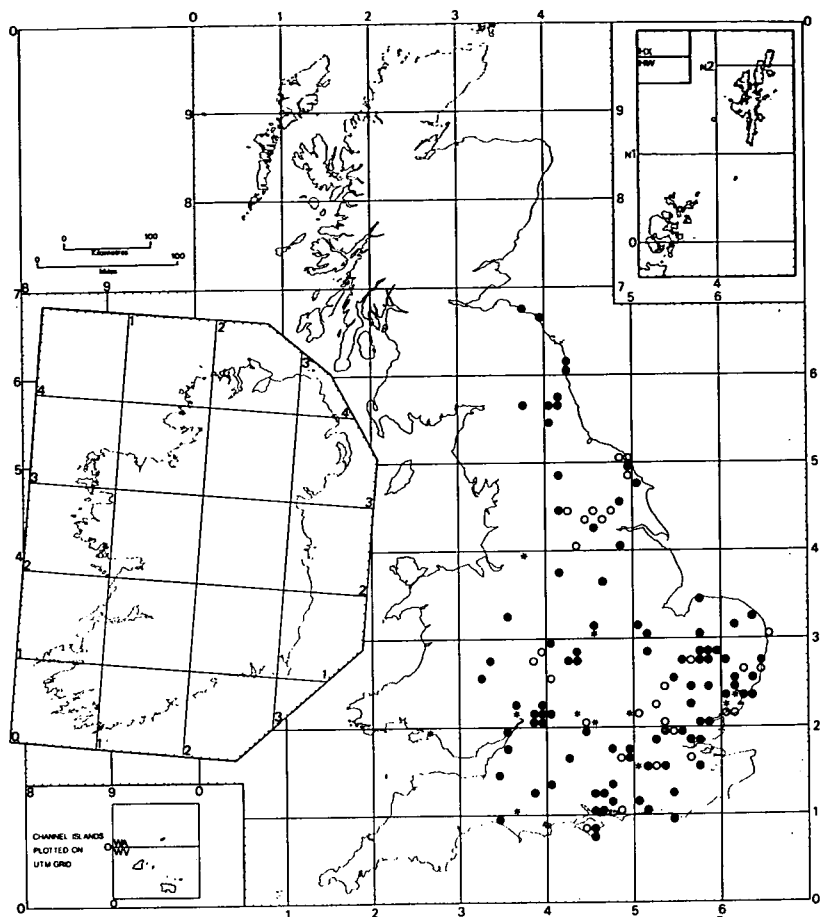
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Both date classes

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Ireland

H21												



VICE-COUNTY DISTRIBUTIONS

Cidnopus minutus (L.)

Britain

					6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23		25	26	27	28	29	30	31	32
33	34		36	37	38	39	40	41		43					
				53	54	55	56	57		59		61	62	63	64
65	66	67	68		70										
81															

Channel Islands



Pre-1950

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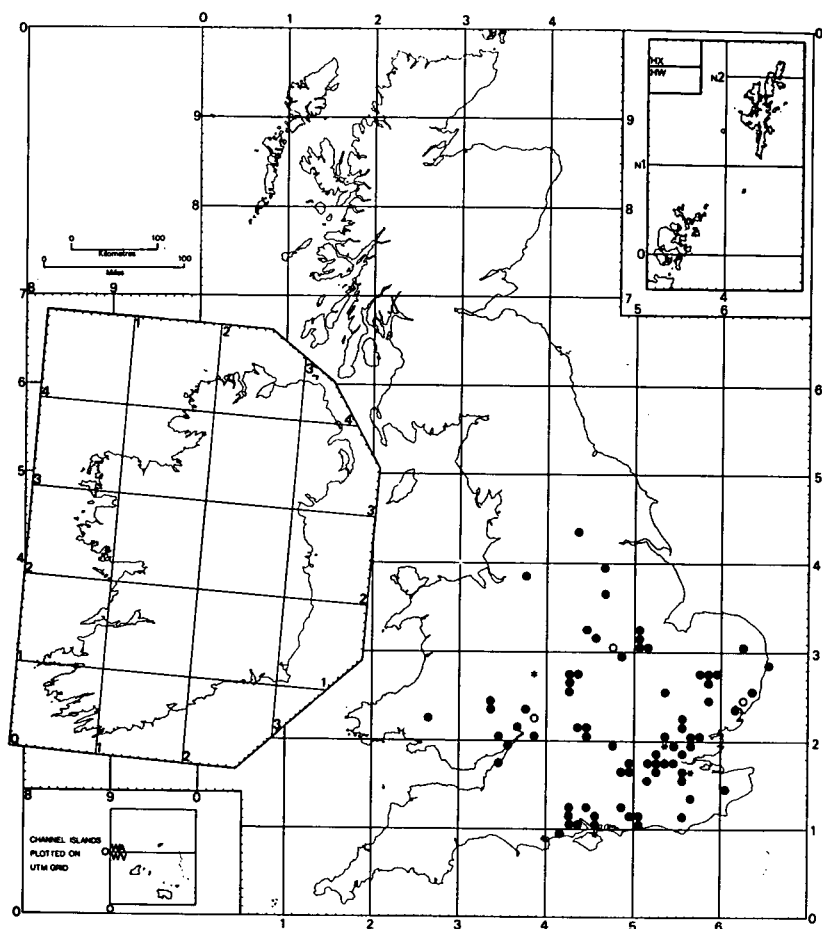
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Stenagostus villosus (Fourcroy)

Britain

					6		8		10	11		13	14	15	16
17	18	19	20	21	22	23		25	26	27		29			32
33	34	35	36	37	38						44				
				53		55	56		58						64

Channel Islands



Pre-1950

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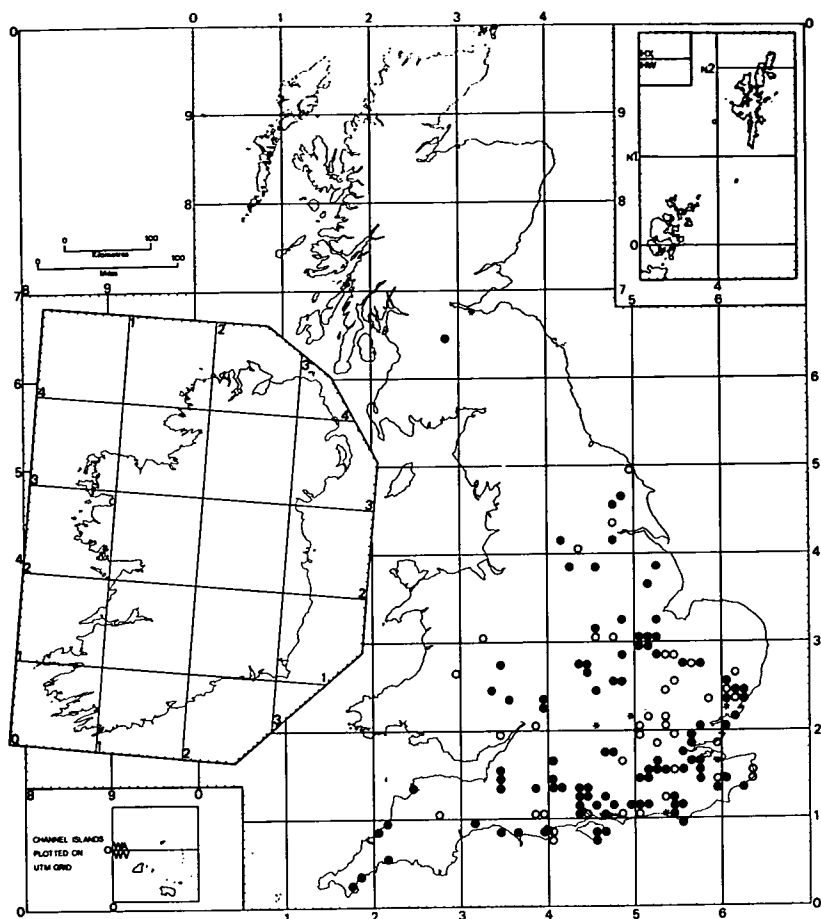
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Athous bicolor (Goeze)

Britain

1	2	3	4		6		8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23		25	26			29	30	31	32
33		35	36		38					43				47	
				53	54	55						61	62	63	
												77			
			84												

Channel Islands



Pre-1950

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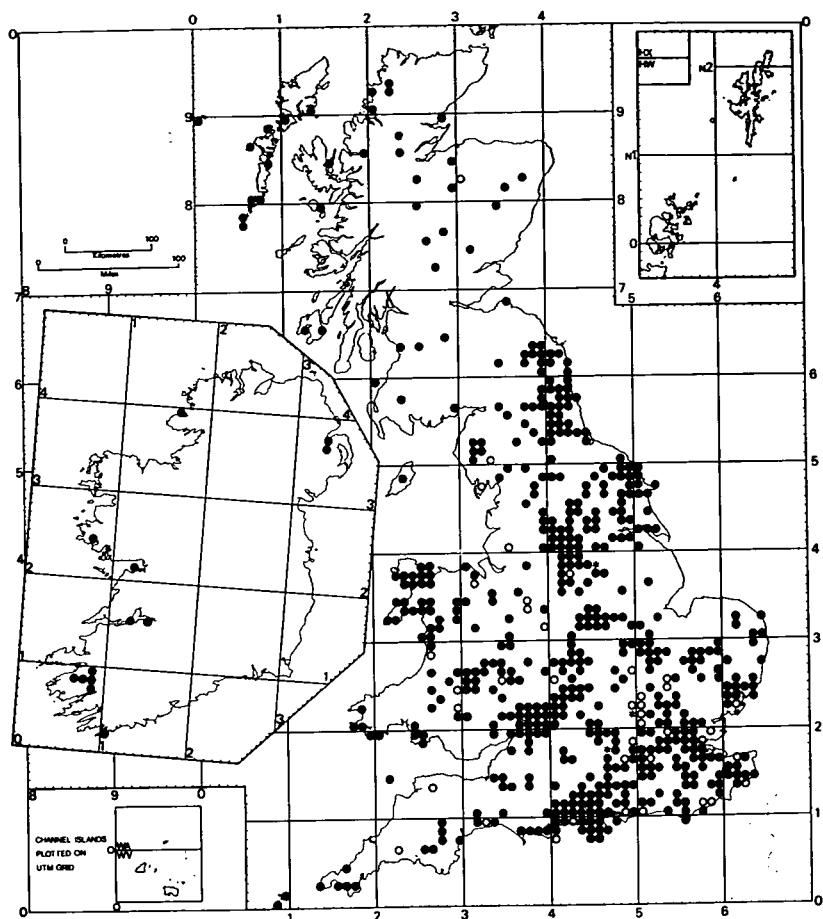
1950-1987

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Both date classes

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Ireland



Athous haemorrhoidalis (F.)

VICE-COUNTY DISTRIBUTIONS

Britain

1	2	3	4		6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49		51	52	53	54	55	56	57	58	59		61	62	63	64
65	66	67	68	69	70	71		73		75		77			80
	82						88	89			92			95	96
97					102	103	104	105	106	107	108		110		

Channel Islands



Pre-1950

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1950-1987

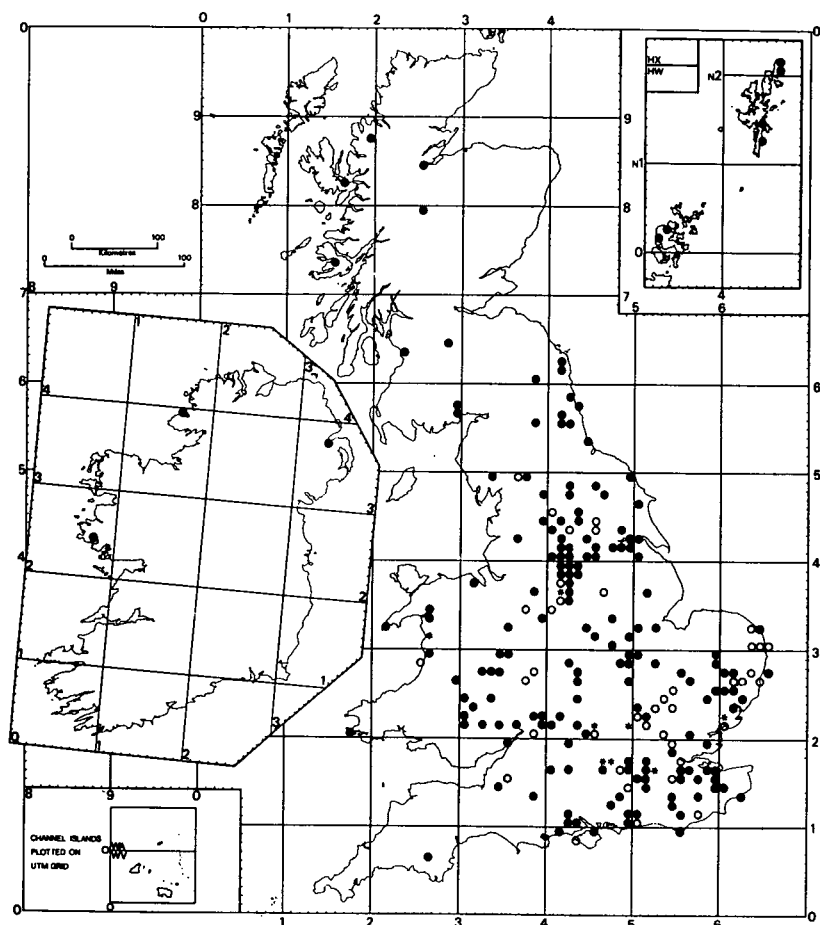
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Both date classes

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Ireland

H1		H3					H8	H9
					H16			
				H35			H38	



VICE-COUNTY DISTRIBUTIONS

Athous hirtus (Herbst)

Britain

		3			6	7	8		10	11	12	13	14	15	16
17	18	19	20	21	22	23		25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40		42	43		45	46		48
49		51		53	54	55	56	57	58	59		61	62	63	64
65	66	67	68	69		71		73		75		77			
															96
97						103	104	105						111	112

Channel Islands



Pre-1950

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1950-1987

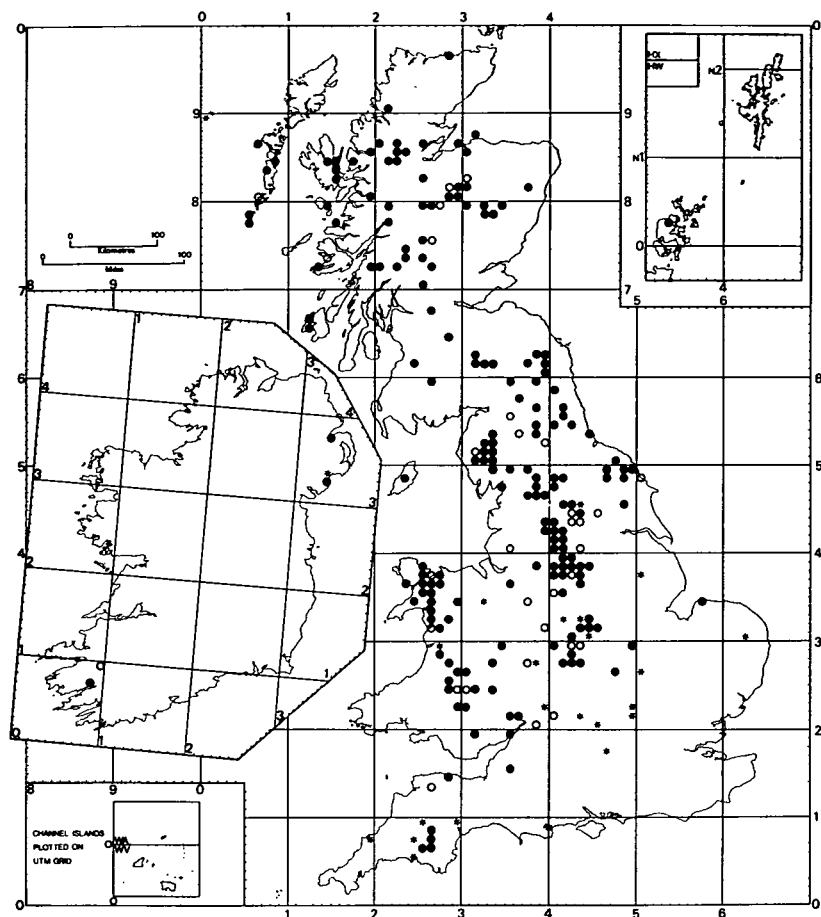
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Both date classes

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Ireland

					H6		H8	H9	
					H16				
H21									
					H35			H38	



VICE-COUNTY DISTRIBUTIONS

Ctenicera cuprea (F.)

Britain

1		3	4	5	6												
			20			23				27	28		30		32		
33	34	35	36	37	38	39	40		42	43			46	47	48		
49	50		52		54	55			58	59		61	62	63	64		
65	66	67	68	69	70	71	72	73		75		77	78	79	80		
						86	87	88				92			95	96	
97	98					102	103	104	105	106		108		110	111		

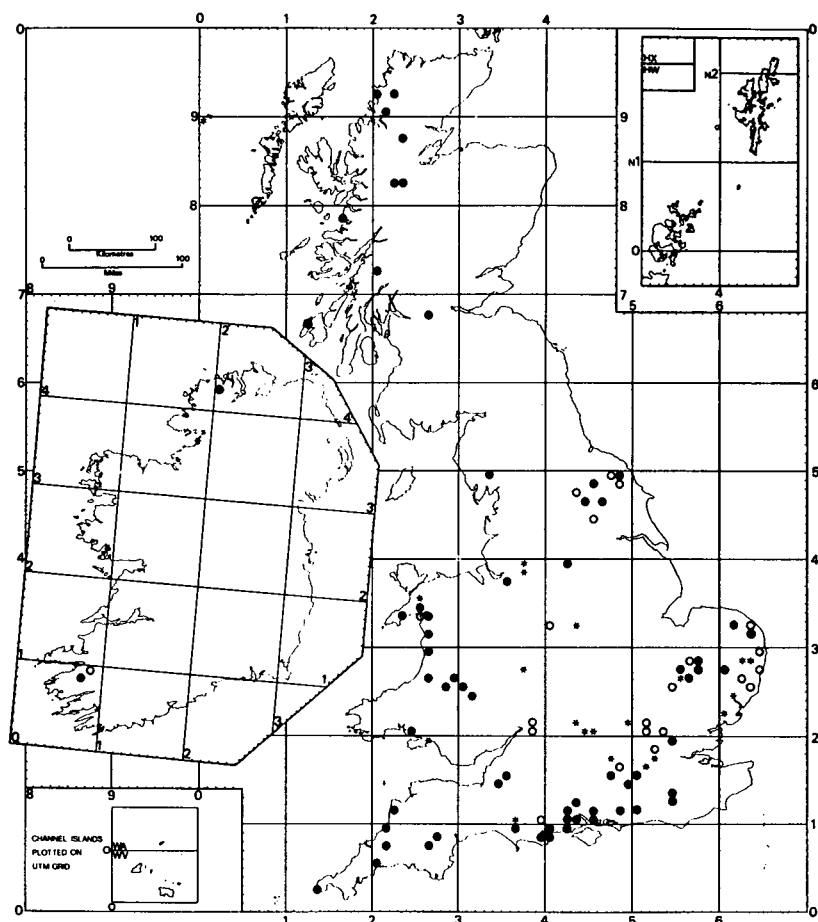
Channel Islands



Pre-1950 000
 1950-1987 000
 Both date classes 000

Ireland

H1	H2	H3						H9	
H21				H25		H27			
		H33				H37	H38	H39	



VICE-COUNTY DISTRIBUTIONS

Actenicerus sjaelandicus (Müller)

Britain

1	2	3		5	6			9		11	12	13	14		
17	18	19	20	21	22	23		25	26	27		29	30		
33			36	37		39		41	42	43	44		46		48
49								57	58	59			62	63	64
				69											
					86										96
97	98				102			105	106		108		110		

Channel Islands



Pre-1950

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1950-1987

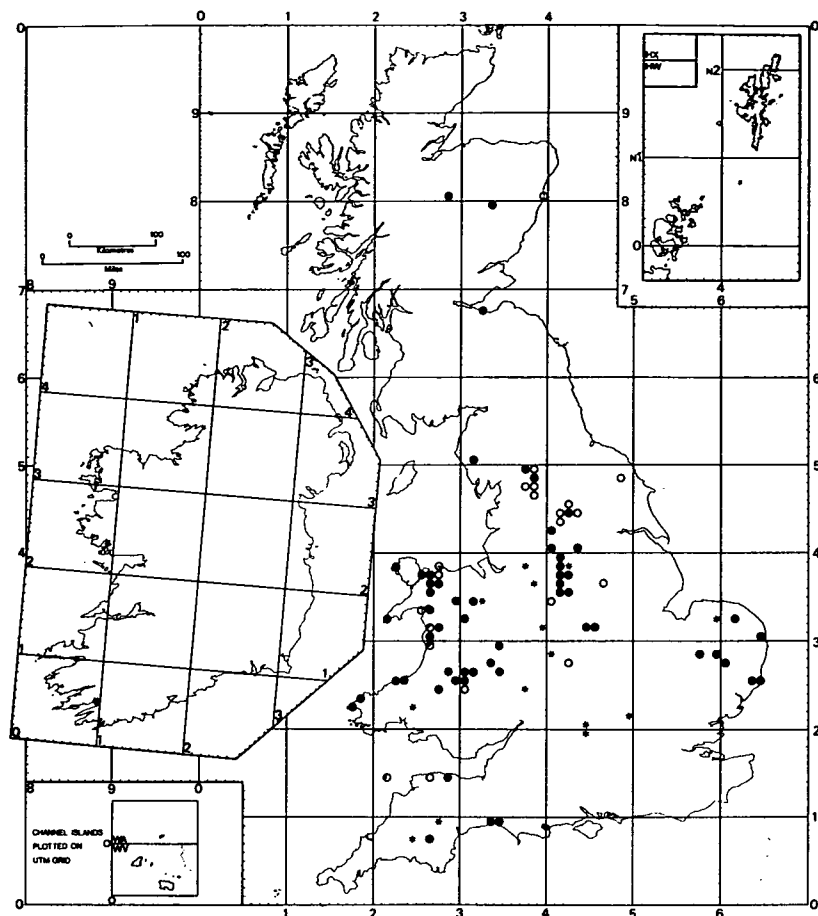
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Both date classes

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Ireland

H1									H9
H21					H25				
		H33	H34	H35				H38	H39



Selatosomus aeneus (L.)

VICE-COUNTY DISTRIBUTIONS

Britain

		3	4	5				9									
			20		22			25	26	27	28						
			36	37	38	39	40		42	43	44	45	46	47	48		
49	50		52			55	56	57	58				62	63	64		
65					70												
		83								91	92					96	
													110				

Channel Islands



Pre-1950

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1950-1987

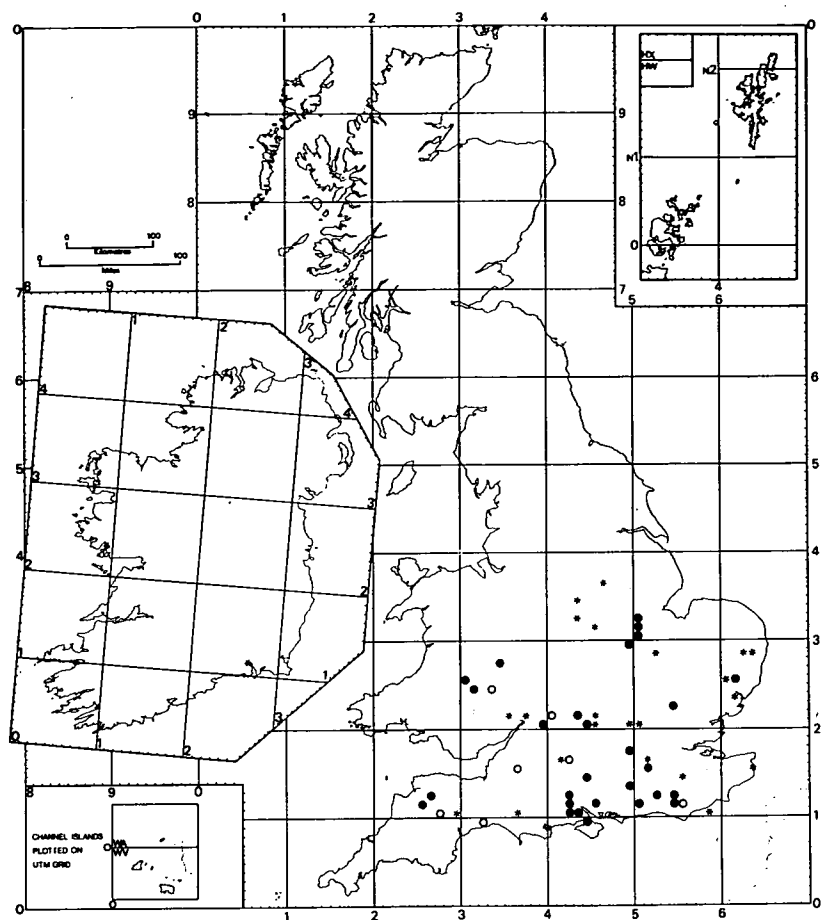
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Both date classes

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Ireland

		H3															



VICE-COUNTY DISTRIBUTIONS

Selatosomus bipustulatus (L.)

Britain

		3	4		6	7	8	9	10	11	12	13	14	15	16
17		19	20		22	23		25		27				31	32
33	34		36							43					
				53		55	56	57							

Channel Islands



Pre-1950

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1950-1987

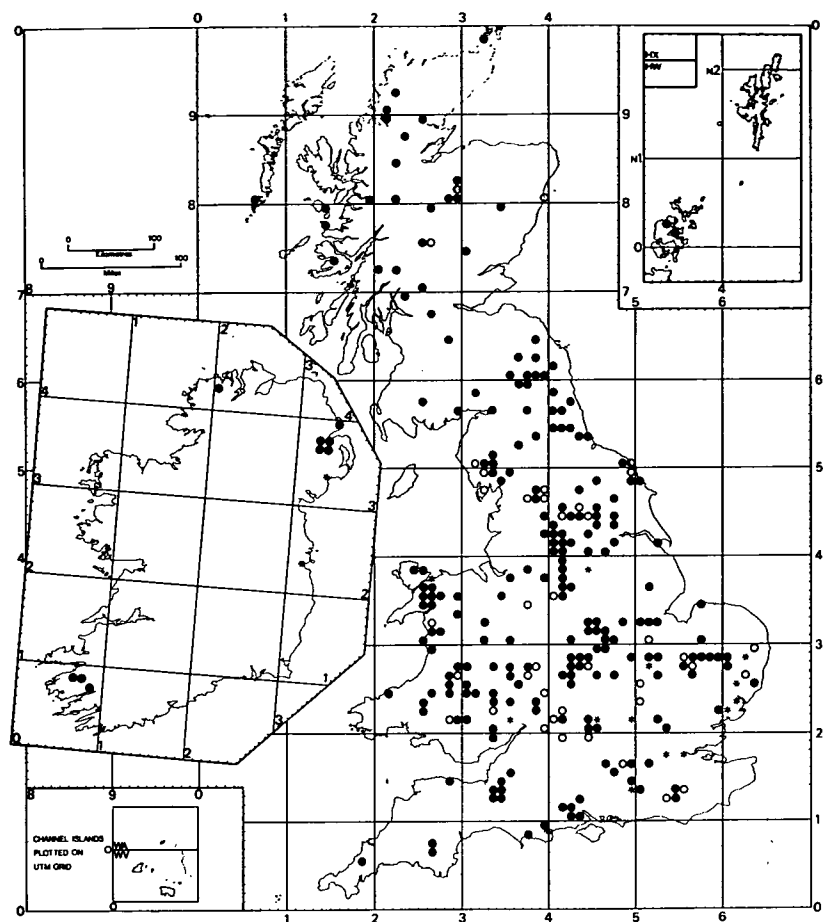
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Both date classes

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Ireland

				H6					



VICE-COUNTY DISTRIBUTIONS

Selatosomus incanus (Gyllenhal)

Britain

1		3		5	6			9		11	12		14		16
17	18	19	20		22	23		25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40		42	43	44		46	47	48
49	50		52	53		55		57	58			61	62	63	64
65	66	67	68	69	70		72	73				77			80
					86	87	88	89		91	92			95	96
97	98					103	104	105	106		108		110	111	

Channel Islands



Pre-1950

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1950-1987

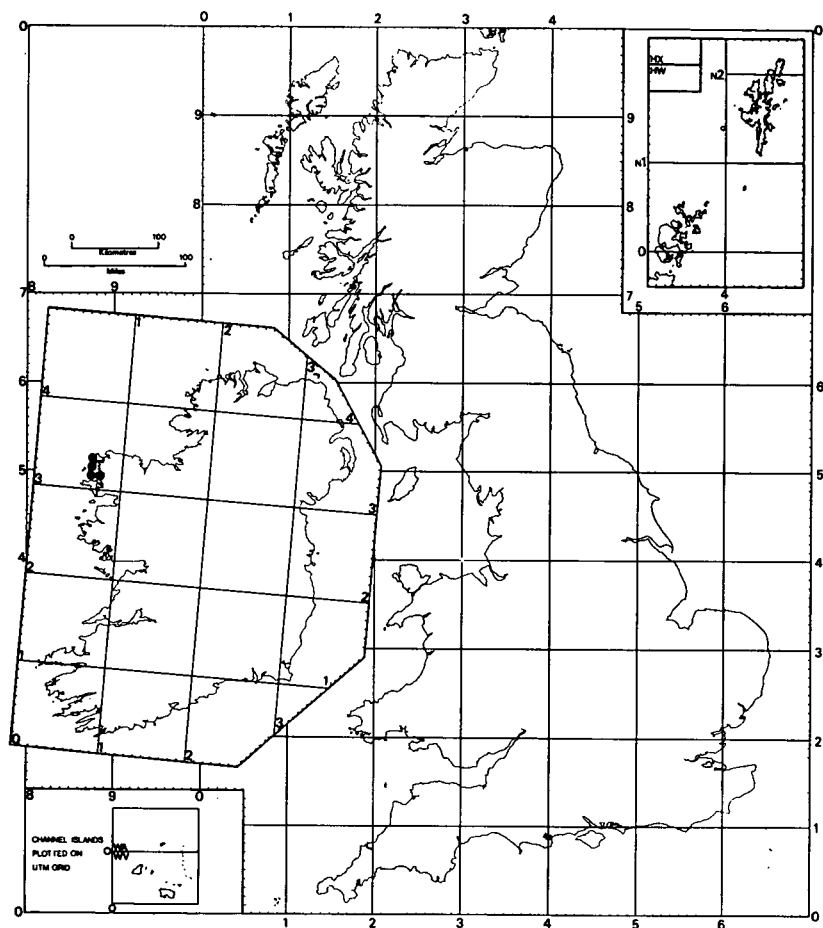
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Both date classes

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Ireland

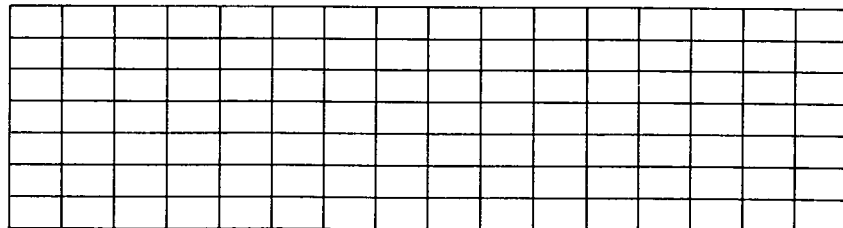
H1															
H21															
								H35		H37	H38	H39			



VICE-COUNTY DISTRIBUTIONS

Selatosomus melancholicus (F.)

Britain



Channel Islands



Pre-1950

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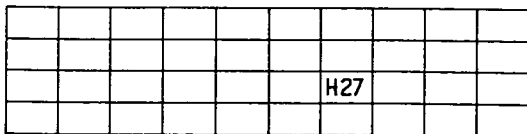
1950-1987

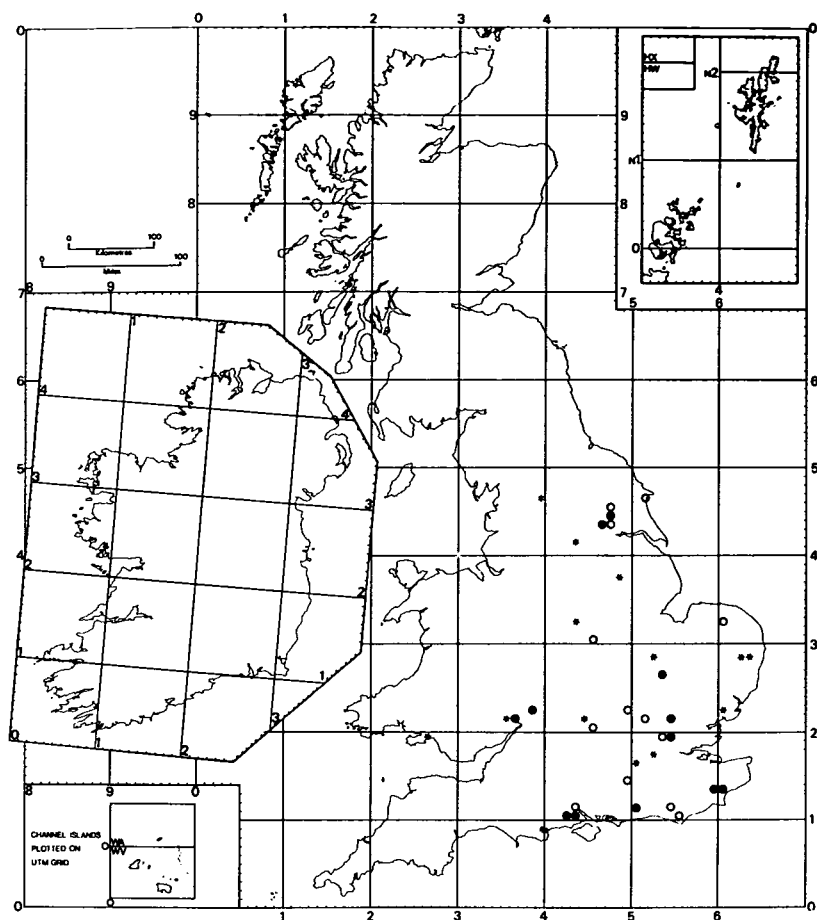
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Both date classes

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Ireland





VICE-COUNTY DISTRIBUTIONS

Selatosomus nigricornis (Panzer)

Britain

									11		13	14	15	16
17	18	19	20	21		23		25		27		29	30	31
33	34							41						
					54	55		57			61	62	63	64

Channel Islands



Pre-1950

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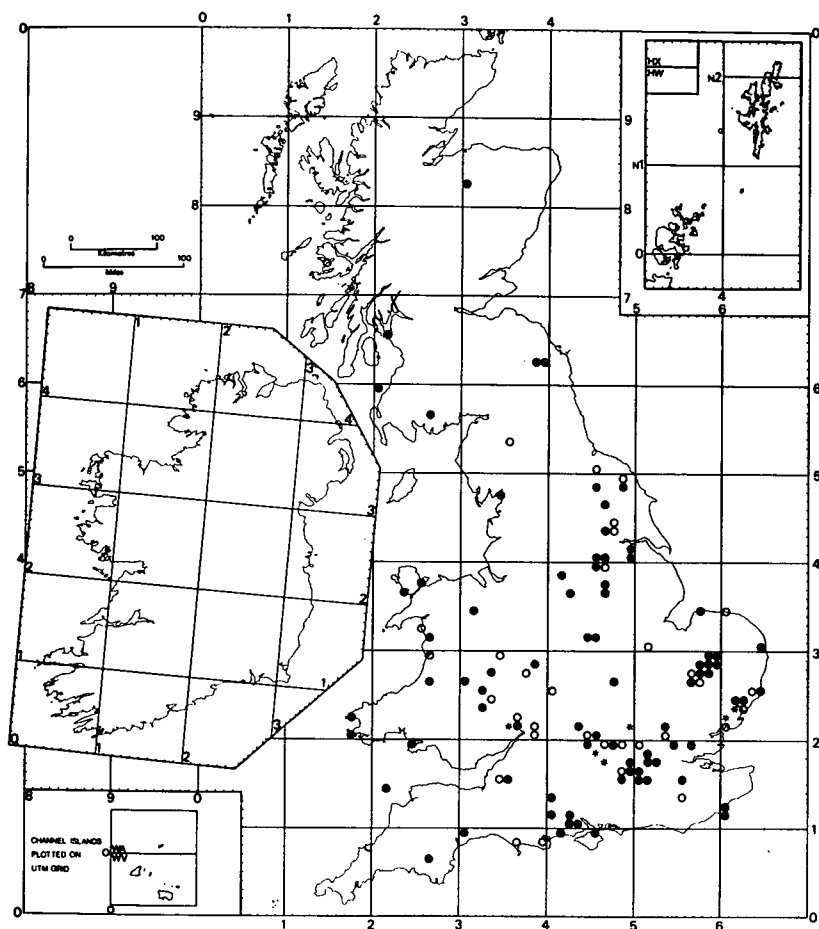
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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Prosternon tessellatum (L.)

Britain

		3	4		6		8	9		11	12		14	15	16
17	18	19	20	21	22	23	24	25	26	27	28		30		32
33	34	35	36	37		39	40	41	42	43		45	46		48
49	50		52		54	55	56	57			60	61	62	63	
			68		70			73		75					80
														95	
			100			103									

Channel Islands



Pre-1950

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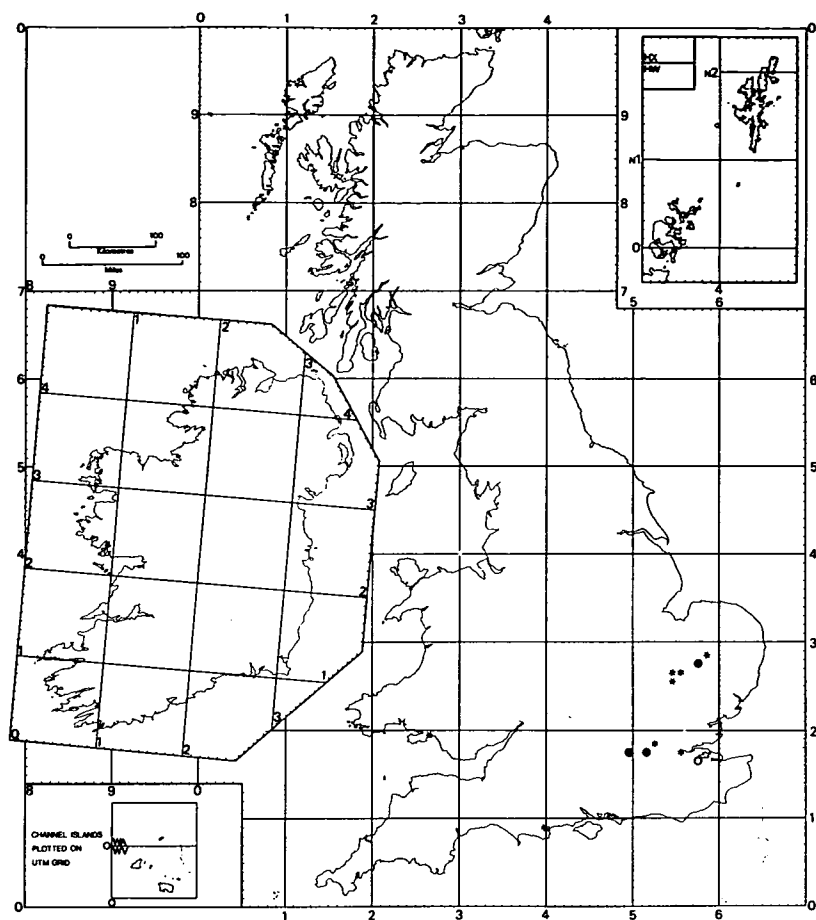
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Elater ferrugineus L.

Britain

17				21	22			26		29		15	16
							41						

Channel Islands



Pre-1950

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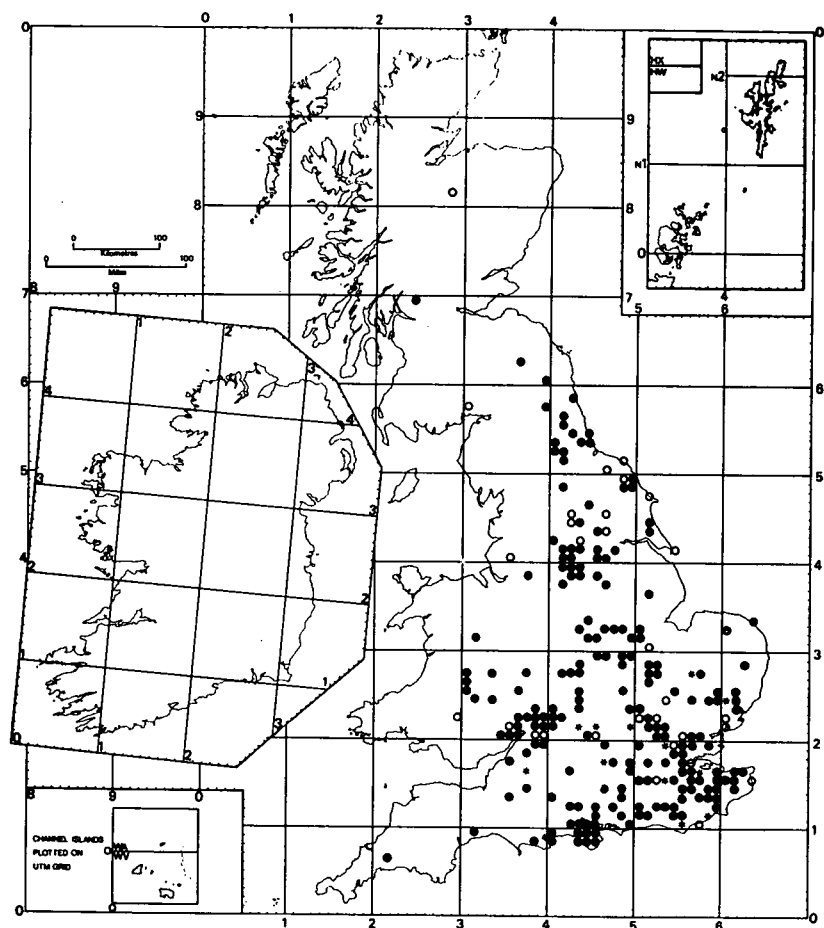
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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Agriotes acuminatus (Stephens)

Britain

	2	3			6	7	8	9	10	11	12	13	14	15	16
17	18	19	20		22	23	24	25	26	27		29	30	31	32
33	34	35	36	37	38		40		42	43				47	
				53		55	56	57	58	59		61	62	63	64
65	66	67			70		72								80
					86										96

Channel Islands



Pre-1950

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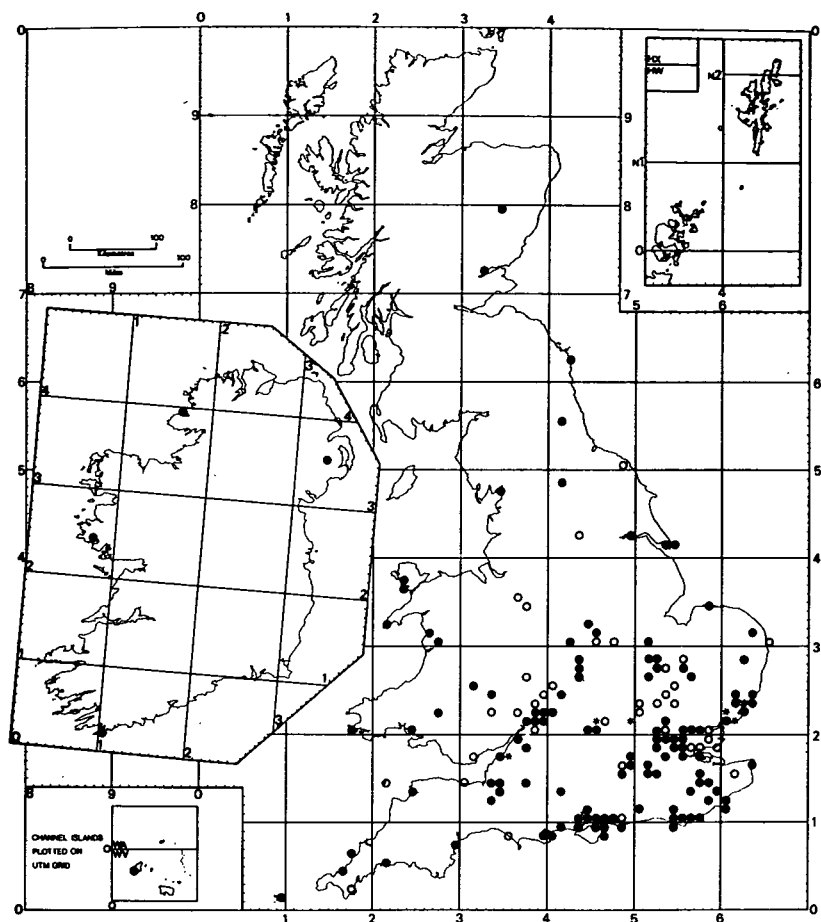
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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Agriotes lineatus (L.)

Britain

1	2	3	4	5	6		8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23		25		27	28	29	30	31	32
33	34	35	36	37	38	39		41		43	44	45			48
49			52			55			58		60	61	62	63	
65	66		68												
								89			92				

Channel Islands

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Pre-1950

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1950-1987

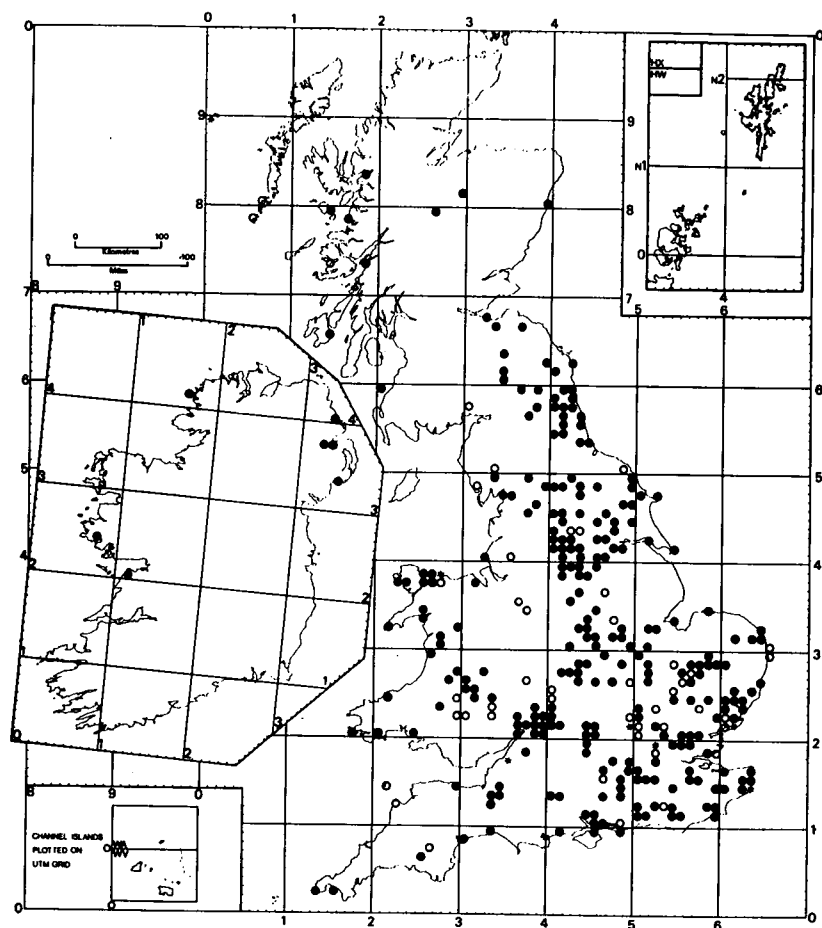
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Both date classes

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Ireland

		H3							
					H16				
H21									
				H35			H38		



VICE-COUNTY DISTRIBUTIONS

Agriotes obscurus (L.)

Britain

1		3	4	5	6		8	9		11	12	13	14	15	16
17	18	19	20	21	22	23		25	26	27	28	29	30	31	32
33	34		36	37	38	39			42	43	44	45	46	47	48
49		51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70		72			75				79	80
	82	83									92				96
97	98				102	103	104	105					110		

Channel Islands



Pre-1950

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1950-1987

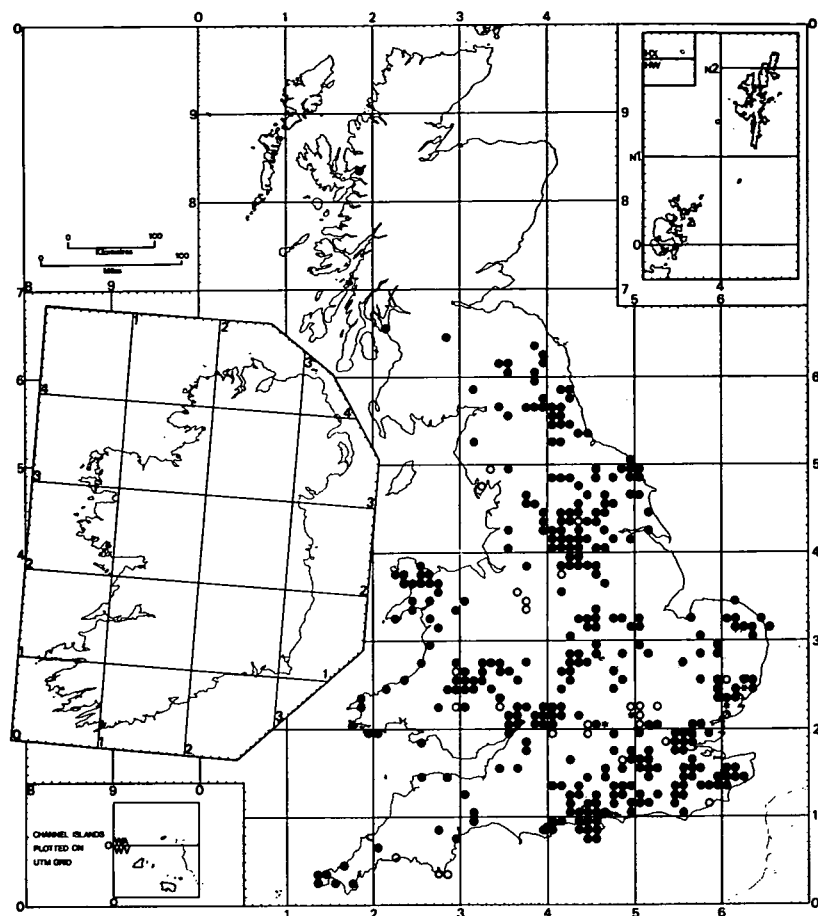
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Both date classes

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Ireland

							H9	
					H16			
				H35			H38	H39



VICE-COUNTY DISTRIBUTIONS

Agriotes pallidulus (Illiger)

Britain

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23		25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46		48
49			52	53	54	55	56	57	58	59		61	62	63	64
65	66	67	68	69	70		72					77			80
			100					105							

Channel Islands



Pre-1950

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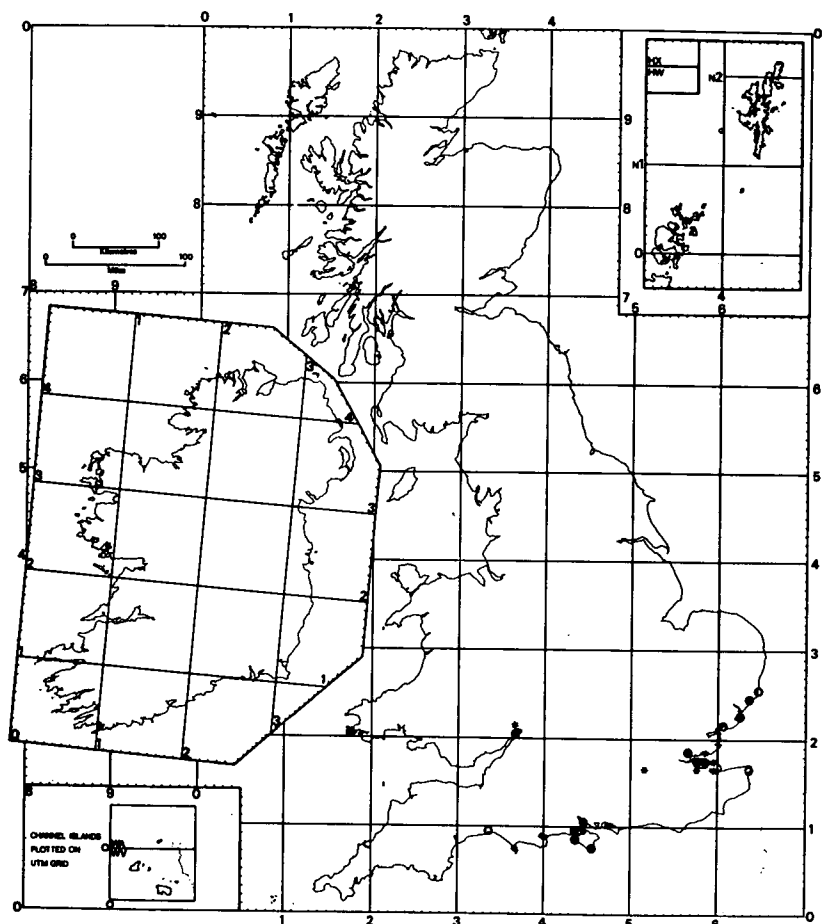
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Agriotes sordidus (Illiger)

Britain

						9	10	11				15	16
17	18	19		21		25							
	34									45			
									60				

Channel Islands



Pre-1950

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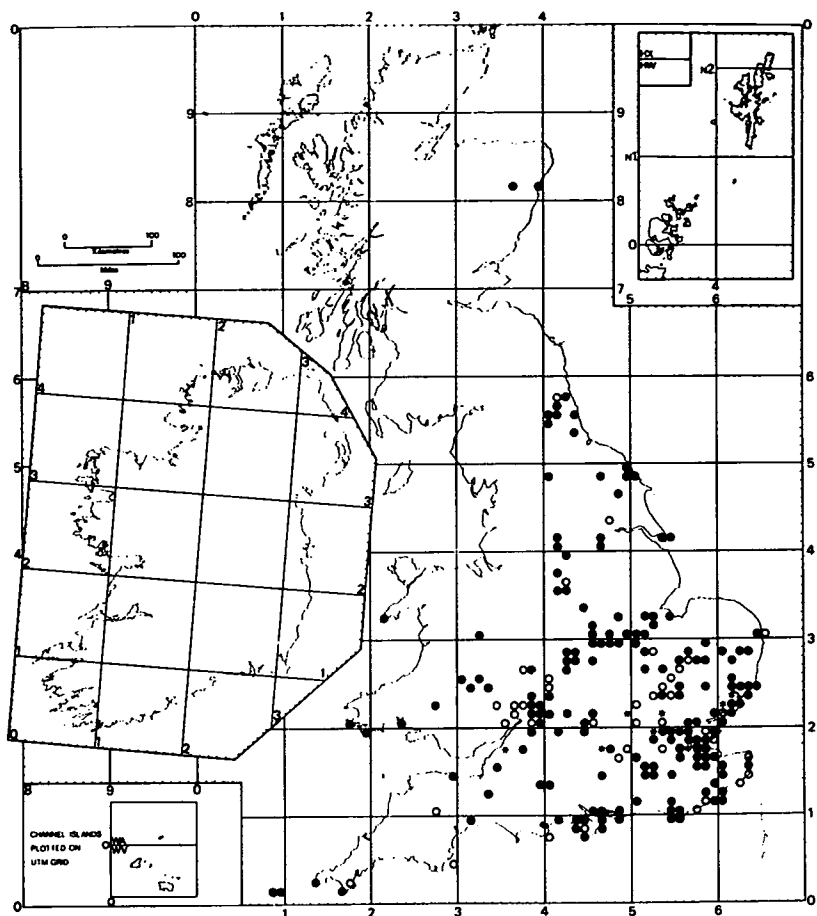
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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Agriotes sputator (L.)

Britain

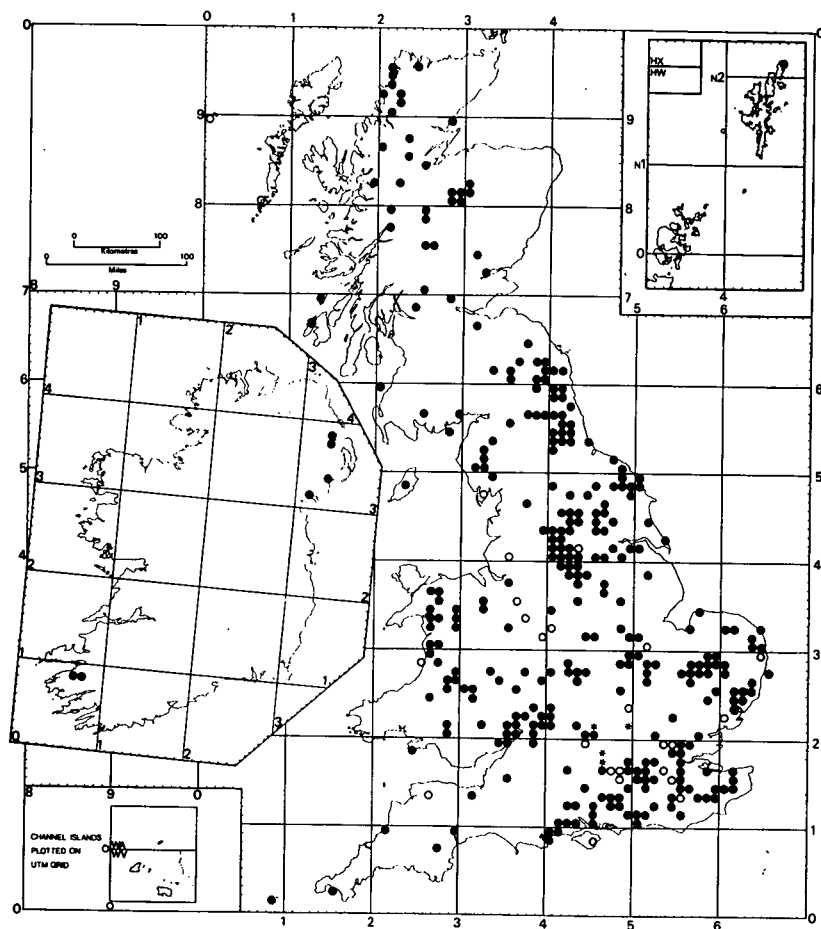
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17	18	19	20	21	22	23		25	26	27	28	29	30	31	32
33	34	35	36	37	38					43	44	45		47	
49				53		55		57				61	62	63	
65	66	67													
											92				

Channel Islands



Pre-1950 000
 1950-1987 000
 Both date classes 000

Ireland



VICE-COUNTY DISTRIBUTIONS

Dalopius marginatus (L.)

Britain

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44		46	47	48
49	50			53	54	55	56	57	58	59			62	63	64
65	66	67	68	69	70	71	72	73		75				79	80
81		83				87	88	89						95	96
97					102			105	106	107	108		110		112

Channel Islands



Pre-1950

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1950-1987

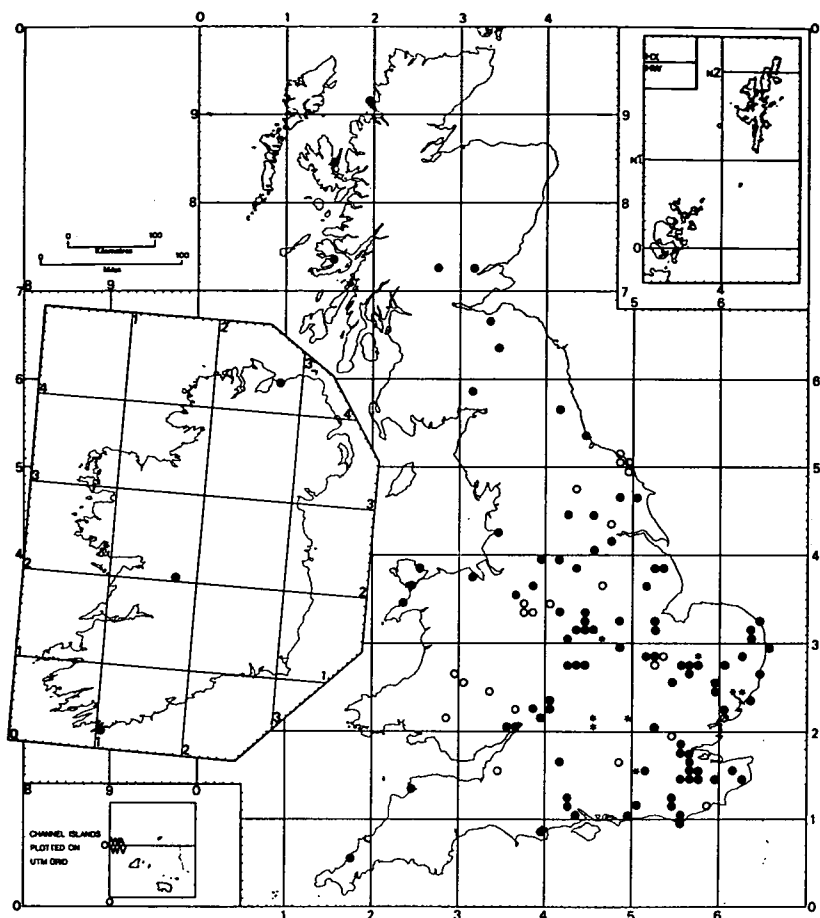
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Both date classes

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Ireland

H1									
				H15					
								H38	H39



VICE-COUNTY DISTRIBUTIONS

Adrastus pallens (F.)

Britain

1			4		6	7		9		11		13	14	15	16
17	18	19	20		22	23		25	26	27		29	30	31	32
33	34		36		38	39			42	43					
49		51	52	53	54	55	56	57	58	59		61	62	63	64
65	66	67					72							79	
		83					88								
						103	104	105							

Channel Islands



Pre-1950

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1950-1987

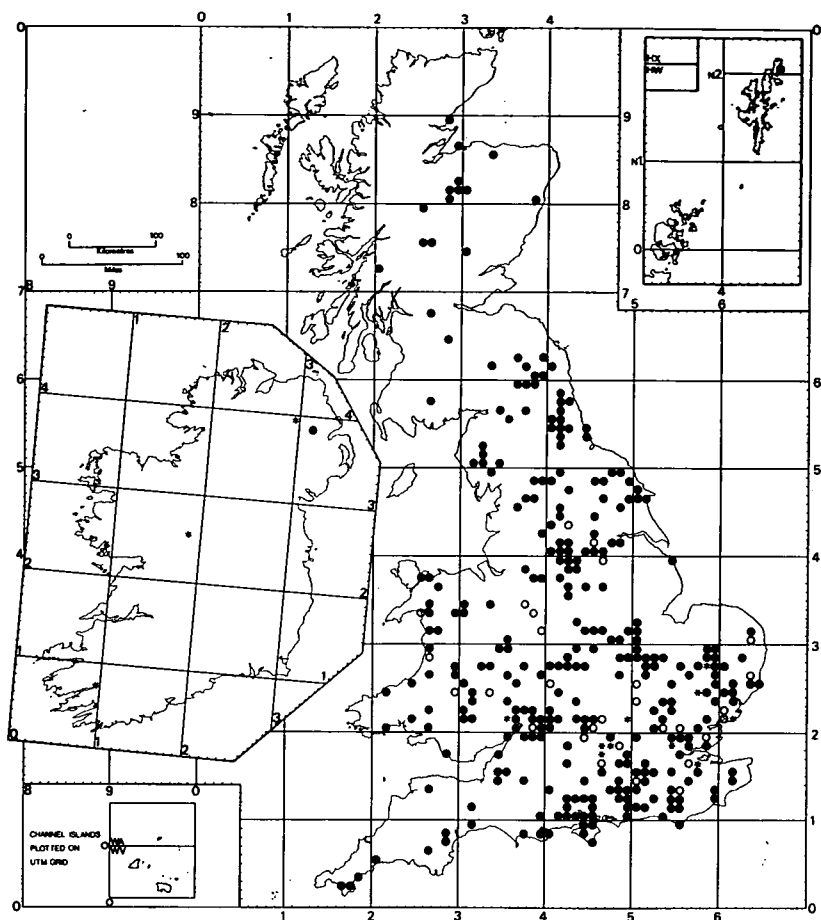
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Both date classes

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Ireland

		H3							
				H15					
H21									
						H37			H40



VICE-COUNTY DISTRIBUTIONS

Denticollis linearis (L.)

Britain

1	2	3	4		6	7	8	9	10	11	12	13	14	15	16
17	18	19	20		22	23	24	25	26	27	28	29	30	31	32
33	34		36	37	38	39	40	41	42	43	44	45	46		48
49	50		52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70							77			80
					86		88	89			92			95	96
97	98									107			110		112

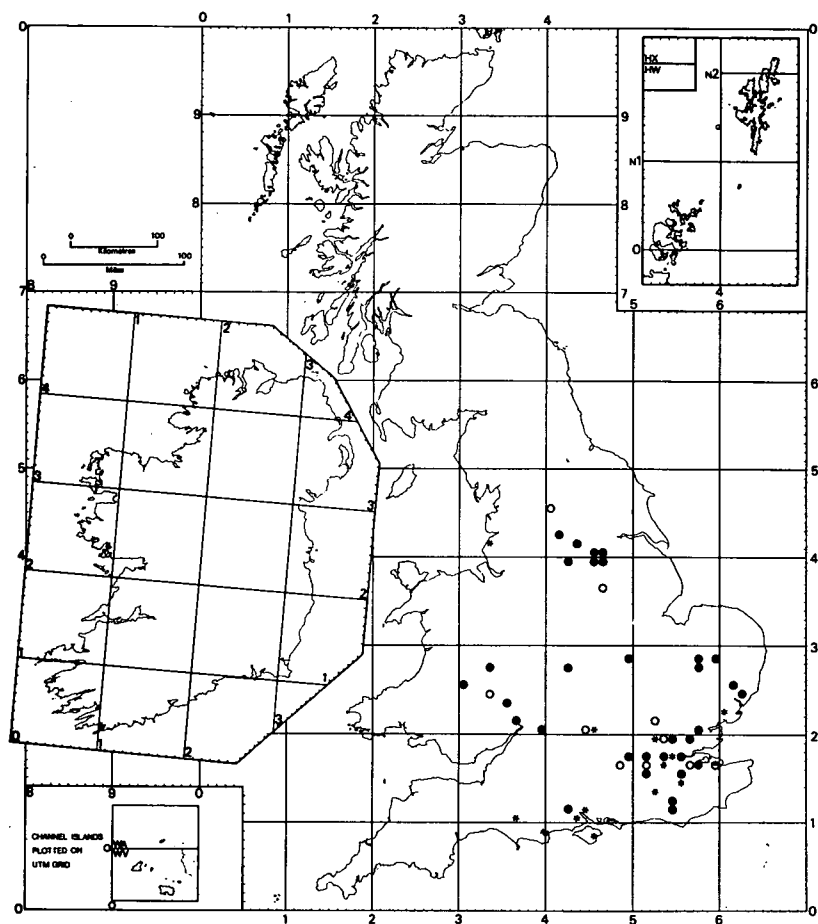
Channel Islands



Pre-1950 000
 1950-1987 000
 Both date classes 000

Ireland

H1									H9
				H25					
								H39	



VICE-COUNTY DISTRIBUTIONS

Trixagus carinifrons (de Bonvouloir)

Britain

							8	9	10	11			14	15	16
17	18	19	20	21	22			25	26		28				32
33	34		36		38					43					
							56			59				63	64

Channel Islands



Pre-1950

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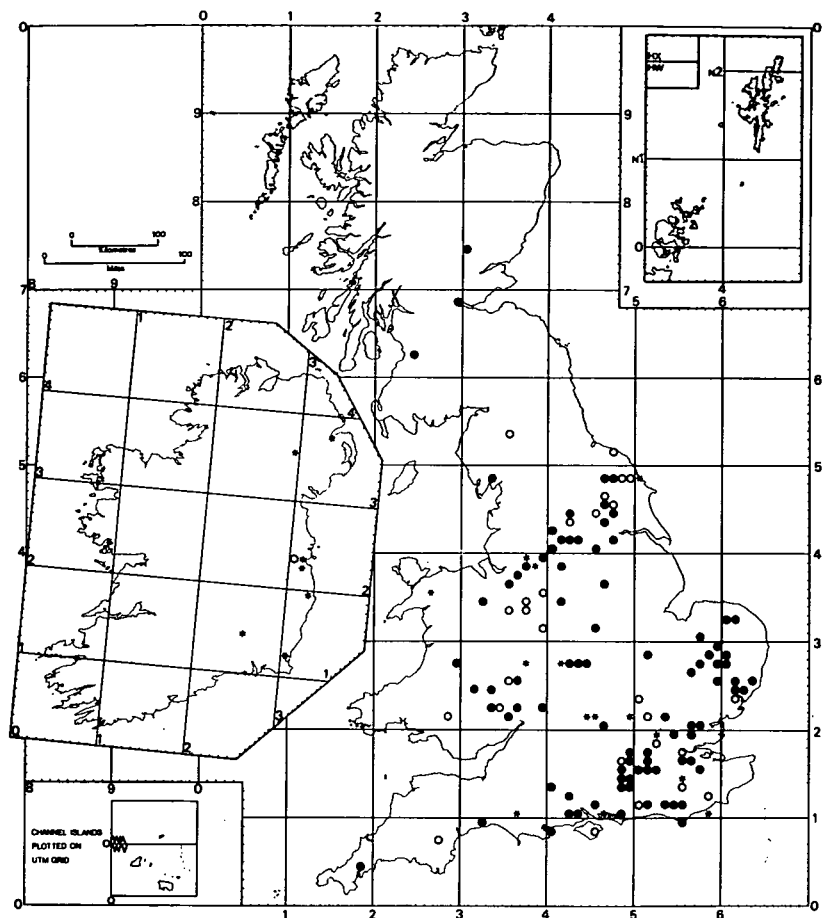
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Trixagus dermestoides (L.)

Britain

1		3					8	9	10	11	12	13	14	15	16
17	18		20	21	22	23		25	26	27	28	29	30	31	
33	34	35	36	37	38	39	40			43					
49	50					55	56	57	58	59		61	62	63	64
				69	70					75					
			84					89							

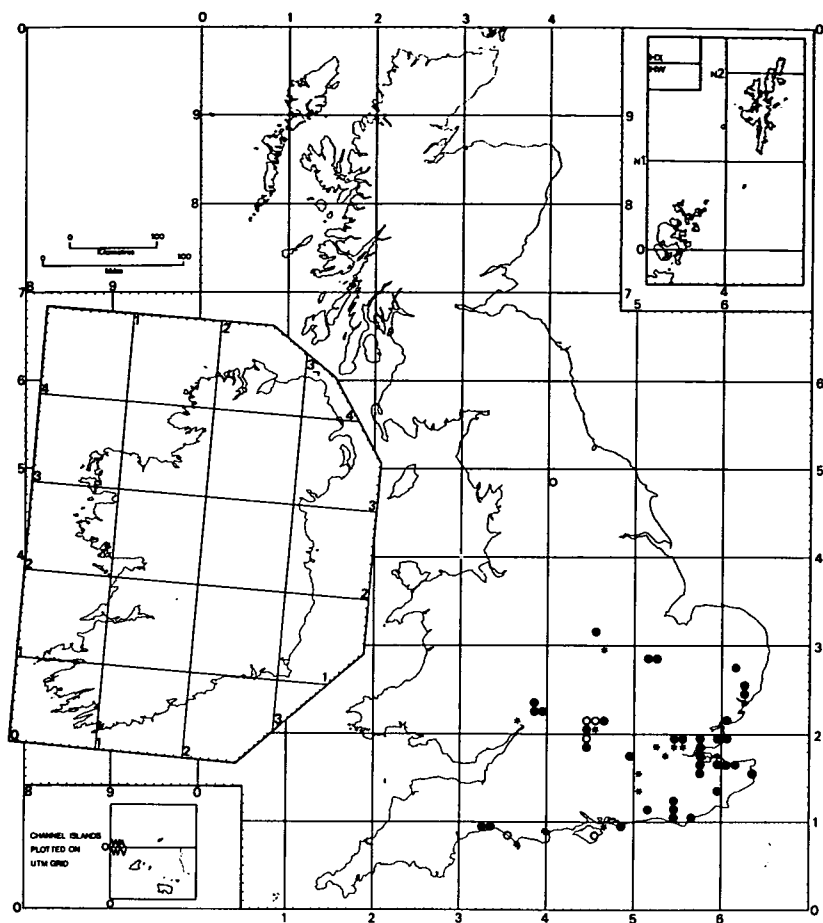
Channel Islands



Pre-1950 000
 1950-1987 000
 Both date classes 000

Ireland

												H9	
H11	H12												H20
H21													
											H37	H38	



VICE-COUNTY DISTRIBUTIONS

Trixagus obtusus (Curtis)

Britain

		3						9	10	11		13	14	15	16
17	18	19		21	22	23	24	25		27			30	31	
33	34					55									
65															

Channel Islands

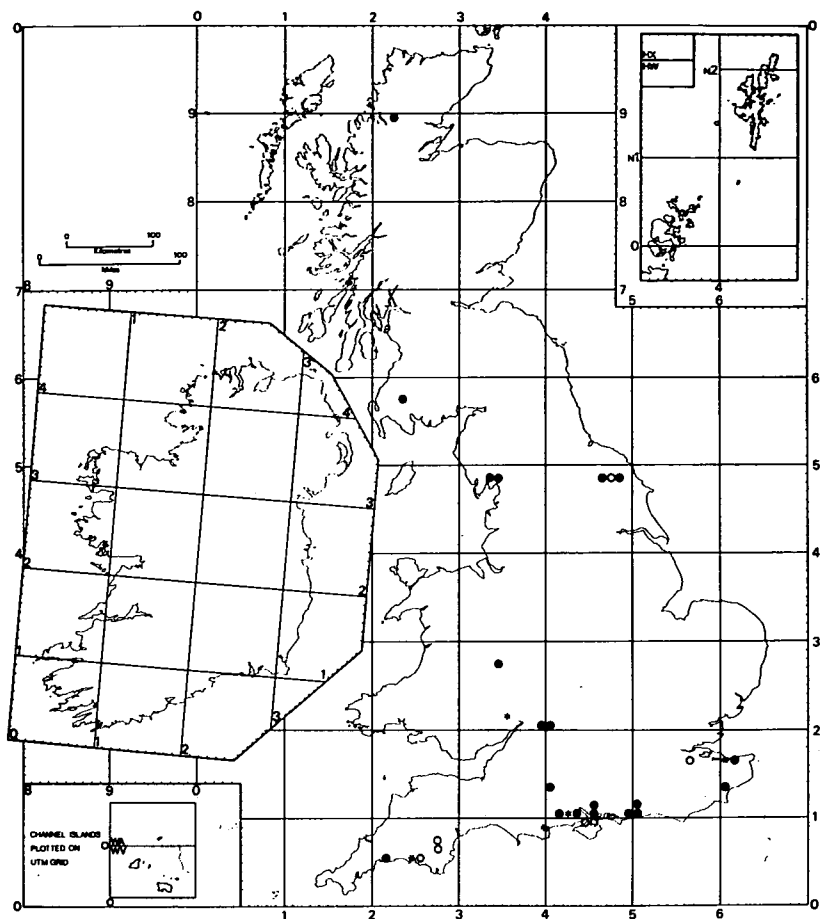


Pre-1950 000

1950-1987 000

Both date classes 000

Ireland



VICE-COUNTY DISTRIBUTIONS

Dirhagus pygmaeus (F.)

Britain

	2	3	4				8		10	11		13		15	16
33	34		36												
												62			
			69				73								
							105								

Channel Islands

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Pre-1950

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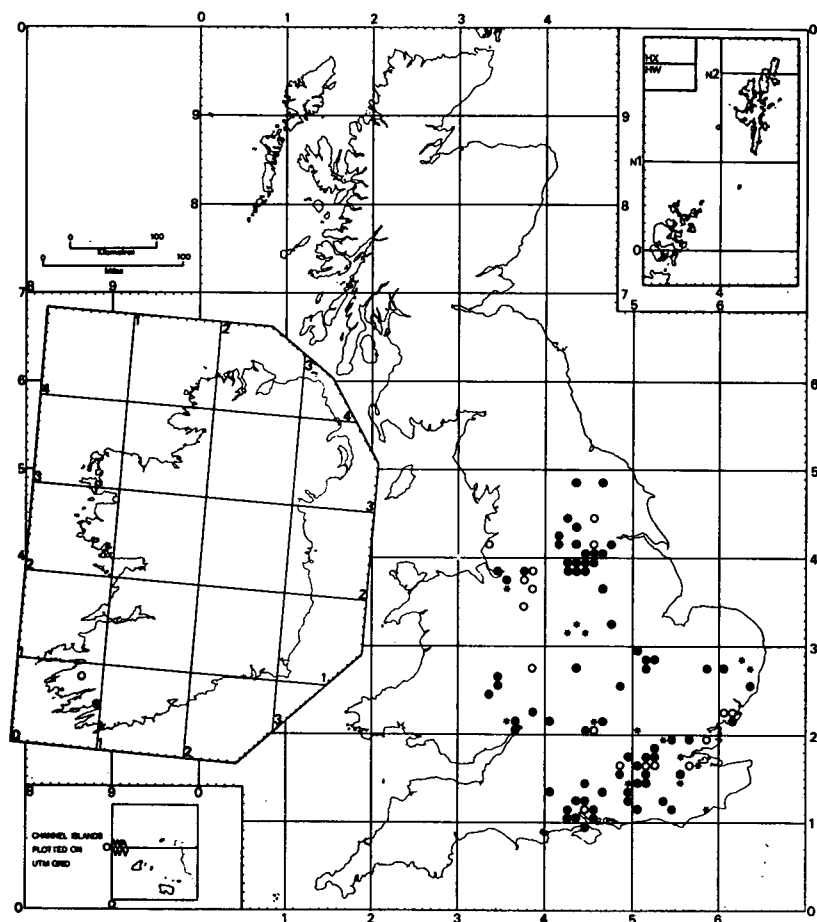
1950-1987

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Both date classes

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Ireland



VICE-COUNTY DISTRIBUTIONS

Melasis buprestoides (L.)

Britain

							8		10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27			30	31	32
33	34		36	37	38	39									
						55	56	57	58	59			62	63	64
65															

Channel Islands



Pre-1950

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1950-1987

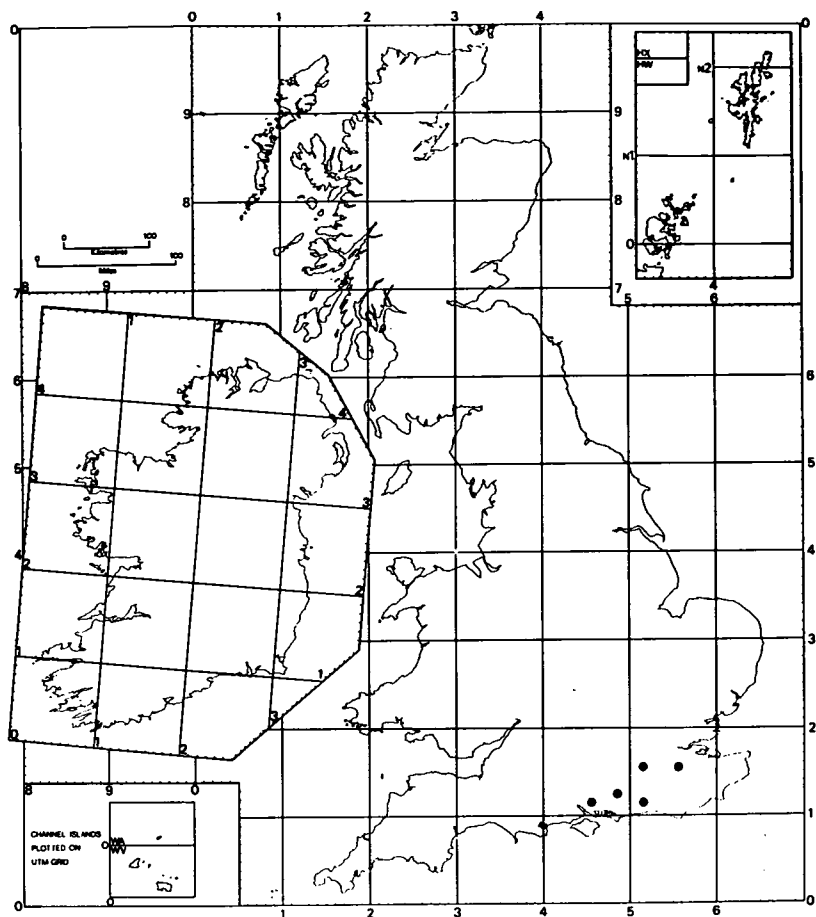
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Both date classes

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Ireland

H1		H3													



VICE-COUNTY DISTRIBUTIONS

Hylis olexai (Palm)

Britain

										11		13				16
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Channel Islands



Pre-1950

000

1950-1987

000

Both date classes

000

Ireland

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